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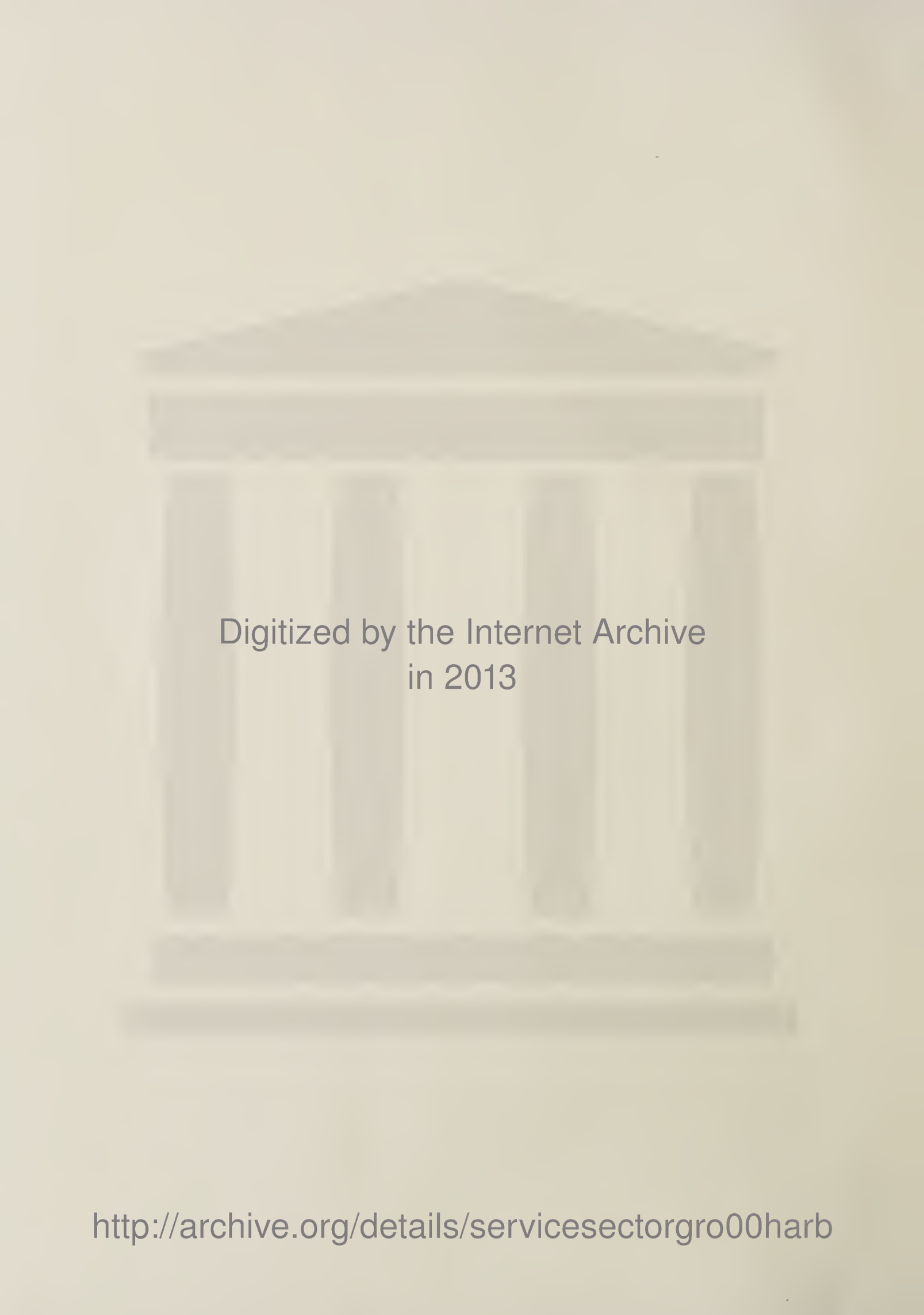
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SERVICE SECTOR GROWTH:

Its Implications for the Massachusetts Economy and Federal Base Redevelopment

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THE COMMONWEALTH OF MASSACHUSETTS

SERVICE SECTOR GROWTH: ITS IMPLICATIONS FOR THE MASSACHUSETTS ECONOMY AND FEDERAL BASE REDEVELOPMENT

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Prepared by:

Harbridge House, Inc.
Boston, Massachusetts
April, 1975

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All of the above share in this report and in any progress or insights it achieves. None except the project director share in any errors, omissions, or faulty judgements.

Donald N. Stone, Ph. D.

THE SERVICE SECTORS OF THE MASSACHUSETTS ECONOMY

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I. INTRODUCTION AND CONCLUSIONS

A. Introduction to the Problem

Until recently public concern for the condition of the Massachusetts economy has been focused upon the well-documented shift away from manufacturing and toward service activities. However, the focus was one-sided and the well-worn question was "How can the state recapture manufacturing jobs?"[1] The other obvious question--"What are the implications of the increasing service jobs?"--was hardly addressed at the state level.[2]

1
See for example, James Howell, The First National Bank of Boston, The Manufacturing Structure of New England, 1972; Donald N. Stone, Boston Economic Development and Industrial Commission, Boston's Industry, 1970; Heinz Muehlmann, Massachusetts Department of Commerce and Development, The Manufacturing Sector in Massachusetts; and Arthur D. Little, Inc., Fostering Industrial Growth in Massachusetts.

2
There was one little-noticed but good discussion of service industries in the state, however. This was brief, theoretical, and placed in an appendix of K. Heinz Muehlmann and Robert J. Kenney, Jr., Economic Changes in Massachusetts, Massachusetts Department of Commerce and Development, Appendix II, pp. 163-184. The state later mentioned in a farsighted manner some problems of the service sector economy in K. Heinz Muehlmann with Robert J. Kenney and Rena Kottcamp, An Appraisal of the Economy of Massachusetts, Massachusetts Department of Commerce and Development, December 1971, 11. 15-18. On page 15 the authors remark, "There has not been an adequate study on the subject of 'service economy' for the state." However these comments and their correct but tentative observations were part of a larger analysis which itself garnered little public attention.

Curiously, the question of a service economy was examined recently in both a regional and local context. See the New England Regional Commission, The Service Sector as a Factor in the Economic Growth of New England, 1971; also Alexander Ganz and Peter Menconeri, The Expanding City of Boston Economy, Boston Redevelopment Authority, 1972. Unfortunately, in the absence of statewide analysis, the conclusions about the service sectors in the latter study, fully appropriate for Boston, have frequently been felt to apply to the state as a whole.

It was known that in the post-war period 1947 - 1974, our state's non-agricultural employment grew by 37 percent or 671,000 jobs,[1] and that approximately 90 percent of this gain was contributed by what we shall call the "service" sectors -- Transportation, Trade, Finance and Selected Services.[2] Yet the thrust of public concern was toward the 131,000 manufacturing jobs that Massachusetts lost, not toward the most than 600,000 all-service jobs that it gained. The reasons for this relative lack of attention can be summarized as stemming either from the erroneous assumption that none of the all-service jobs provided valuable "exportable" products to out-of-state purchasers, or from the equally fallacious notion that all-service jobs were growing adequately without public attention or policy concern.

The Massachusetts Commission on Federal Base Conversion, recognizing this serious omission in previous economic research, has commissioned Harbridge House to provide at least a data resource document on the all-service sectors of the state's economy. The scope of our work and the quality of available data permit only a modest and preliminary effort, to be sure.

Yet, even these initial trends provide a disturbing general picture -- one suggesting that the state's economy may be more troubled in the long run because of the increase in service jobs than because of the decline in manufacturing jobs. In other words, the relatively poor quality and geographic distribution of service activities suggests that their large and growing number may be more of a liability than an asset. Indeed, we would like to raise the seemingly paradoxical notion that the growing rate of Massachusetts unemployment in the 1960's and 70's may be significantly attributable to the growing number of service jobs.

---

1 Massachusetts Division of Employment Security, based upon unpublished data available from the labor market research section.

2 Transportation includes communication and utilities. Trade includes wholesale and retail trade. Finance includes insurance and real estate. Selected Services include health, education (not local public schools), legal services, janitorial work, non-profit organizations, advertising, other business sectors and miscellaneous entertainment and cultural services. All governmental employment is <u>not</u> part of what we call "service sector".

Of course this general picture must be "fine tuned" and qualified. There are some promising aspects to service sector jobs. There are some areas of the state that are benefiting. There are some service job-holders that are paid well.

The report that follows will attempt to provide a detailed analysis of the quantity, quality and geographic distribution of the diverse group of activities called services. In doing so it will be treating several fundamental if implicit assumptions that have characterized this state's odyssey for broad economic policy solutions.

Most of these assumptions about services were derived from discussions of other parts of the economy that only peripherally involved service activities. Nevertheless, when pieced together the general public impression of service activities is that

- Services have structurally upgraded our economy as they replaced manufacturing. Therefore the loss of production jobs has been more than compensated by the growth of services.

- Massachusetts' shift to a service economy parallels similar shifts nationally, and is probably identical to shifts occurring in other mature industrial states.

- Service activities are relatively insensitive to national recessions, hence their growth represents superior insulation from national economic downturns.

- Since services are white-collar opportunities, they are more desirable from the worker's perspective than the blue-collar opoortunities in manufacturing. Worker

satisfaction may therefore be greater in services than in manufacturing.

- Major sections of the service sector are actually export industries that contribute a good deal of out-of-state dollars to our economy.
- Employment in services has grown very quickly and will continue to grow similarly in the future.
- Service employment is not seasonal and therefore represents stable job opportunities.

Indeed it was this general impression that promoted the Commission on Base Conversion to examine the service sectors. After all, if manufacturing jobs have been rapidly drying up and if the state has been too preoccupied with manufacturing,[1] then perhaps the areas affected by federal base closings should be advised as to how to attract these rather bountiful and burgeoning service activities.

The problem with this line of reasoning is its underlying assumptions about service activity are for the most part incorrect or inaccurate. Few are valid. As for base-closed communities, there are some selective initiatives that they can undertake, and we will discuss these later. But as our investigation developed, the priority concern shifted from base community

---

[1] The general reaction to a November 1974 report to the Joint Committee on Commerce and Labor by Bennett Harrison was that the state should shift and extend its concern to other sectors, that the state should practice economic development not simply industrial development. However, it would be incorrect to say that the Harrison report offered a blanket endorsement of the service sectors. In fact, he did not deal with them in depth, but a close reading of his report reveals that at several points in his analysis he identified substantial economic difficulties associated with some service activities.

policy alone to a broader concern for a new definition and treatment of service activities in Massachusetts.

Moreover, during the course of our analysis we were confronted by several issues that are worth mentioning here because they are so explanative of the conduct and caliber of economic concerns in general and service sector concerns in particular.

Some of these issues such as the poor organization of state-collected economic data is by no means a new realization. It is startling nonetheless that the state had not previously arranged its abundant information in a manner that could answer as simple a question as, "How many people were employed in department stores in Massachusetts in 1969?" or, "What were wage levels in the transportation sector in Brockton in any year prior to 1970?" It is not that this information was being purposely withheld, nor does "mismanagement" or "waste" explain the situation. The reason is quite simply that the agency involved collects this information in order to discharge its responsibility of managing the unemployment insurance program. It does not collect the information for the purpose of statewide economic planning. We should also stress that appropriate state officials are aware of this deficiency and have already taken steps to help correct it. Nonetheless, prior to our hand calculation of print-out sheets, this basic information did not exist. (A discussion of the problems encountered in handling the data and a statement of the information that is now available because of our efforts can be found in Appendix III.)

Another issue we encountered was more conceptual than organizational. The relative size of the Boston major labor market so overwhelms data from other areas that the statewide averages always approximate the Boston area experience.[1] While the statewide average is still a true

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1 This phenomenon is also probably somewhat true of other sectors, but Boston's service sector is especially large and unique relative to the rest of the state.

indicator of the average experience in Massachusetts, the problem is that state averages sometimes run counter to the experience in the seven other major labor market areas and elsewhere in Massachusetts. In some instances then there were two Massachusetts, one in Boston and one in the rest of the state. As a result, any recommended policy that was based on statewide averages would have a tendency to be responsive more to Boston area trends than to trends in the rest of the state. Consequently a special focus of our study became not simply the number and type of service jobs, but the quantity and quality of those jobs in different areas of the state.

Our third concern was purely pragmatic and not at all conceptual. Public policy as an attempt to solve economic problems requires political decisions of course. But the problems of the Massachusetts economy are not political, and regardless of the administration, there have been and there will be sincere efforts that will need public support. Former Secretary Newman was in the forefront of an effort to reform economic information collection methods. Manpower Affairs Secretary Smith is absolutely correct in setting his priorities on long-term solutions that will require private business support.[1] The public discussion on the state's economic problems has at this point, however, devolved into an effort to categorize any view as coming either from a harbinger of doom or from an optimist. The irrelevance of such "score-keeping" aside, we were concerned that this sort of response to our analysis would become more of a message than the substance of the findings themselves, especially in this national recessionary period. The problems that are with us today had their cause and origins in the boom time period of the 60's and probably before then.

---

1 Remarks by Manpower Affairs Secretary Howard N. Smith, Meeting of the Massachusetts Chamber of Commerce, Boston, February 1975.

Indeed, this very fact helps to explain why services have not been a target for economic policy. The number of service jobs has grown so strongly during the 60's and early 70's that the understandable assumption was that no concern was needed. Even the academic community failed to examine the implications of this growth. It is interesting to note that only recently have there been a variety of independent analyses. Curiously, none were concerned with the service sector, but each has revealed an important finding about services. Barry Bluestone at Boston College, in an attempt to determine the causes of the state's increasing welfare rolls, found that one of several determinants was the growing incidence of certain low-wage, high-labor turnover industries.[1] These industries were exclusively service industries and, as we shall see, they currently represent more than 10 percent of the state's (covered) employment.[2] Fredrick Glantz at the Federal Reserve Bank of Boston in examining regional employment changes has found evidence at least suggesting that the growth of services that Massachusetts experienced up until now may very well slow down considerably in the future.[3] Work on labor quit rates in manufacturing done by Andrew Sum at Northeastern found that quit rates in Massachusetts tended to increase as employment shifted away from manufacturing and

---

1
Professor Barry Bluestone, Economics Department, Boston College, Boston, Personal Interview, 29 October 1974. We are grateful to Dr. Clinton Bourden of the Massachusetts Commission on Base Conversion for bringing Professor Bluestone's work to our attention.

2
Covered employment comprises those jobs that are included in the state's unemployment insurance program. These are certainly the vast majority of jobs; however, the state has little information on non-covered employment.

3
Dr. Fredrick Glantz, Federal Reserve Bank, Boston 20 February 1975, Personal Interview. Mr. Glantz believes that Massachusetts' post-war transformation toward services was rapid because our state was basically "catching-up" to other industrialized states and that now that this process is nearly complete, our growth in these activities will slow down.

toward services.[1] Most recently, the Harrison Report, begun as a legislatively-sponsored analysis of governmental reorganization for economic affairs, confirmed, at one point, that

> The transformation of the economic base from . . . manufacturing to service-oriented . . . work <u>has</u> created serious problems [the most important of which is] that many of the services tend to pay low wages.[2]

Taken together, the various independent analyses raise issues of fundamental importance for they crystallize a disparately held suspicion that several of our state's economic ills may be related to the growth of service activities. As we shall see, this suspicion is well-founded.

B. <u>Summary Conclusions</u>

1. Massachusetts has transformed itself to a service economy faster and to a much greater extent than the country as a whole. Massachusetts is far more service-oriented than other norther industrialized states as well.

1
Andrew Sum and Kenneth Dunmore, "The Determinants of Quit Rate Behavior in Massachusetts Manufacturing Industries 1960-70, and the Implications for Manpower Program Planning and Evaluation," Department of Economics, Northeastern University, June 1974, unpublished manuscript. This valuable work was brought to our attention in Bennett Harrison, "The Economic Development of Massachusetts," a report to the Joint Committee on Commerce and Labor, Senator Allan McKinnon, Chairman. November, 1974, mimeographed.

2
Bennett Harrison, <u>op. cit.</u>, pp. 43-44. The italics are Professor Harrision's.

2. In general, services provide nearly two out of three Massachusetts jobs, and out of 180 different service activities, a group of 31 activities employ nearly one out of every two Massachusetts workers. The ten largest service activities employ better than one out of four workers in this state. Since services have been growing far faster than other employment opportunities, the picture that emerges then is one of extreme concentration and growing concentration.

3. Services offer markedly low wages on average when compared with other sectors in the state. Unfortunately, the large lower wage portions of services have been growing far faster than smaller higher wage services. Worse still, these fast-growing, low-wage service opportunities have experienced relatively modest wage changes since 1960. This means that large amounts of services are low-wage and becoming relatively lower wage at the same time that their employment rolls are increasing quickly.

4. Services are under-represented as an industry previously held by the ranks of those collecting unemployment insurance (UI); but, because of the time it takes an individual to receive UI, those on UI constitute only 50 percent of the unemployed. This still leaves the issue somewhat open, because if service jobs were characterized by high frequency, but short-term turnover, they could contribute appreciably to the ranks of the unemployed while being under-represented among those receiving unemployment compensation.[1]

5. Service sector employment does not appear to be pervasively seasonal. However, there are a few service activities comprising about 9 percent of the state's total employment. These special activities do have substantial seasonality because 30 percent of their average yearly workforce is employed on a seasonal basis.

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1 An alternative hypothesis is that most of the 50 percent that were unemployed and not collecting UI were in jobs that were never covered by unemployment insurance in the first place.

6. Service firms are relatively small on average but the actual employment by firm varies considerably; since 1960 the average size of service firms increased in five out of six industries.

7. Services do have a white-collar orientation, but a full 40 percent are blue-collar. High wage blue-collar opportunities exist largely in wholesale trade and transportation. These represent a minority of service jobs, and their share of total activity has remained constant since 1960. There are blue-collar opportunities in retail trade and in service, but these are likely to be low-wage jobs with limited career potential.

8. Massachusetts services do represent opportunities to attract out-of-state dollars, but although the issue is still unresolved, this "export" employment may represent a fraction of total service jobs -- and these largely confined to Boston at that.

9. Boston with 62 percent of all service jobs in 1973 is the dominant force in the state service economy. Springfield, the second largest labor market, had an 8 percent share, Worcester had 5 percent, Lawrence-Haverhill had 3 percent and the remaining four major labor markets had 2 percent each.

10. Wage levels in services are highest in Boston at $8,200; in Worcester they are $7,100 and in New Bedford they are below $6,000 on average. In terms of seasonality, while 13 percent of Boston's services were subject to strong seasonality, more than a quarter of New Bedford's services experienced major seasonal shifts.

11. In recent years, concentration of service employment has slightly shifted away from Boston. Boston's loss in share of state service employment has <u>not</u> been redistributed to the seven other major labor market areas but to the more rural areas of the state.

12. Boston's service sector, having begun to grow at an earlier date, is more mature than the other labor market areas and growth has begun to slow somewhat. Therefore, in the immediate future, it is likely that the other major labor market areas of the state will demonstrate higher growth rates in service activity. However because of its size Boston will likely continue to absorb the greatest <u>number</u> of new service opportunities.

C. Implications

What are the statewide implications of our rapidly transforming service economy? By and large, there is a tendency for policy strategists to think about the issue of job quantity separately and independently from that of job quality. During the 1960-1973 period, our total supply of jobs grew by 23 percent. This performance far outstripped our 13 percent population increase.

Why then, have we had a growing gap of unemployment? The number of jobs grew by substantially more than the population. In fact, this prodigious spurt in the labor force has been one of the most important and most ignored issues of the Massachusetts economy.[1]

Perhaps part of the answer is that Massachusetts, unlike other areas, has particularly large percentages of working-age people. In fact this is hardly the case.[2] Yet even if we did have a disproportionate amount of working-age people, why should they necessarily seek work?[3] Do Massachusetts residents have

---

1
It is notable that among seven major industrialized northern states, Massachusetts had the second highest labor force participation rate (second only to Illinois by two-tenths of a percent). Also among central cities, Boston had the highest labor force participation rate, exceeding that of New York, Philadelphia, and Chicago and even exceeding such economically depressed cities as Seattle. The source for this information is the Bureau of Labor Statistics, Report #431, Geographic Profile of Employment and Unemployment, 1973.

2
Based on calculations from the 1970 Census, the working-age population as a percent of the total population in 1970 was as follows:

Mass.	Mich.	Del.	Md.	N.Y.	Ohio	Penn.	Ill.
70	67	68	68	71	69	71	69

3
We cannot agree with the suggestion that this is because "more people want to work than ever before," although we might agree with the notion that more people have to work than ever before. See Bennett Harrison, "The Economic Development of Massachusetts," a report to the Joint Committee on Commerce and Labor, Senator Allan R. McKinnon, Chairman (November 1974, mimeographed.)

especially large families that have to be supported? Not likely. Our family size is only slightly larger than the U. S. average, but still below several other industrial states.[1] Is the Massachusetts cost of living so singularly expensive that large amounts of our working-age population must work? Quite possibly. The family-of-four lower budget cost in metropolitan Boston is the highest in continental America.[2]

But could it also be that wages are so low that either primary wage earners must get a second job or that supplemental wage earners must enter the labor force to "make ends meet"? And if this is the case, could we have low wages because Massachusetts has unintelligent, unproductive, un-unionized labor, or do we have low wages because our economy is dramatically shifting into activities that are characterized by LOW WAGES? Is this possibility consistent with the fact that Massachusetts has the highest proportion of women in the labor force of any state and that Massachusetts has a "disproportionate" number of two-wage families?[3] We believe it is.

1
Notably, Michigan, Maryland, and Delaware according to 1970 census figures.

2
U. S. Department of Labor, Bureau of Labor Statistics, "Autumn 1973 Urban Family Budgets and Comparative Indexes for Selected Urban Areas" Issued from the Boston B.L.S. Office on 10 July 1974.

3
Rachelle Patterson, "Two Optimistic Readings of Crystal Ball: Smith -- The Bay State," The Boston Globe, February 19, 1975. Quotation of Wendall McDonald, regional director of Department of Labor's Bureau of Labor Statistics.

Moreover, could it be that the cost of living is combining with the shift into lower-wage service activities so that added workers are compelled to enter the labor force to supplement family earnings, thereby driving up unemployment (even though we have rising employment)?[1]

Now there are certainly many things that explain our state's current situation. However, Table I-1 and Figure I-1 show what we believe to be the central problem of the Massachusetts economy. As the cost of living has risen and as the economy has shifted into lower-wage services, the percentage of workers in sectors paying wages above family-of-four budget has decreased.[2] In 1967 about 60 percent of the state's workforce was employed in sectors paying average wages above the family-of-four lower budget cost ($6,250 in 1967). By 1973 the proportion had decreased to 50 percent above the minimum budget. By 1980 we would conservatively estimate that the proportion will shrink further, to 45 percent above the minimum.[3]

1
This is the Bureau of Labor Statistics' "Lower Budget Cost for a Family of Four" in the Boston area. Since jobs in the Boston area represent 55 percent of the state's jobs, we feel the comparison is reasonable. Moreover, even if New Bedford, Fall River, Brockton, Worcester, etc., have a less expensive family-of-four budget, they also have lower wage levels than Boston.

2
It might be asked how a sector that is adding new jobs yearly could lead to increasing unemployment. Answer: because the sector is low-wage and replaces jobs in higher-wage opportunities. Therefore, in order to recoup some of these "lost" earnings, supplemental job seekers enter the labor market or heads of households re-enter the labor market in search of a second job. The distinction between a supplemental and a multiple job seeker is important. They may be motivated by the same need for added family earners but they are not detectable from the same sources of data. Supplemental job holders would appear as increments to existing labor force participation rates; multiple job holders would not.

3
It is important to note that this represents a slower shift than what occurred from 1967-1973. This is due to what we believe to be a conservative estimate of the future growth of services by the Federal Reserve Bank of Boston.

TABLE I-1
THE IMPLICATIONS OF SERVICE SECTOR GROWTH FOR THE FAMILY BUDGET AND THE NEED FOR SUPPLEMENTAL WAGE EARNERS, MASSACHUSETTS, 1967, 1973 and 1980

	1967			1973			Projected 1980		
Sector	Percentage Distribution of Employment[a]	Average Annual Compensation	Annual Lower Budget Cost of Living for Family of Four in Boston[b]	Percentage Distribution of Employment[a]	Average Annual Compensation[a]	Annual Lower Budget Cost of Living for Family of Four in Boston[b]	Percentage Distribution of Employment[c]	Average Annual Compensation[d]	Annual Lower Budget Cost of Living for Family of Four in Boston[e]
Construction	5.29%	$ 7726	$6,250	5.52%	$11,496	$9,000	5.06%	$17,154	$12,550
Manufacturing	41.71	6514		32.15	9,459		28.28	13,473	
Transportation	6.06	6928		6.02	10,654		5.49	15,803	
Trade	26.88	4844		26.79	6,619		25.70	8,870	
Finance	6.68	6367		6.70	9,079		6.76	12,915	
Selected Services	12.75	4981		22.32	7,426		28.32	10,784	

a Source: Harbridge House Inc., calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summary 1973. Massachusetts Division of Employment Security.

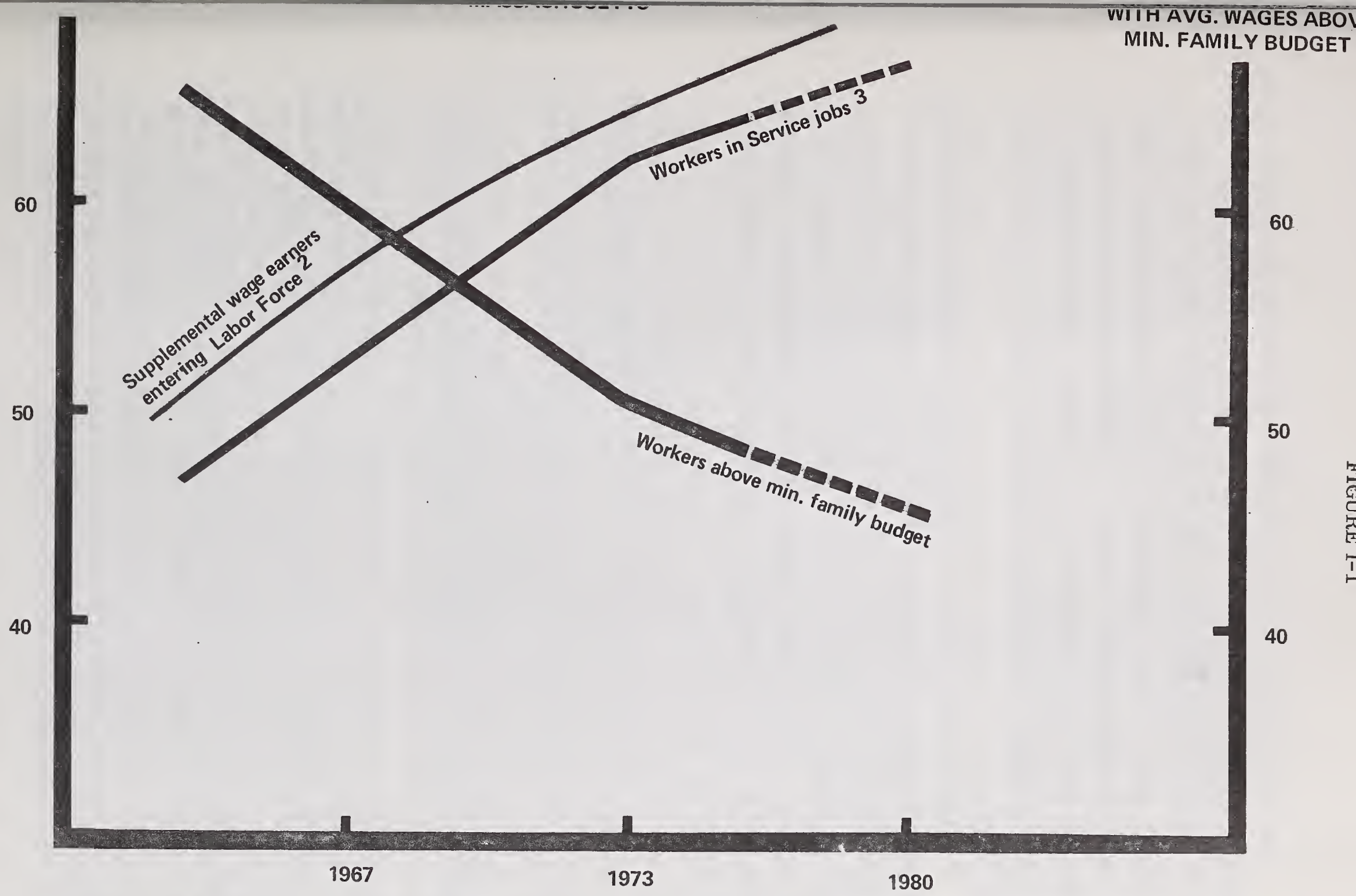
b Source: "U. S. Department of Labor: Bureau of Labor Statistics, rounded to nearest $50.

c Source: Harbridge House Inc., calculations based on article by Frederick B. Olantz, "New England's Employment Growth 1971-1970" in New England Economic Indicators, The Federal Reserve Bank of Boston, July 1974. (Figures for government jobs were eliminated from total employment.)

d Source: Harbridge House Inc., calculations based on data from U. S. Department of Labor, Boston Regional Bureau of Labor Statistics (Annual compound growth rate of 65-73 Consumer Price Index compounded on $8,988 for 7 years.)

e Source: Harbridge House Inc., calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summaries 1965 and 1973 (annual compound growth rate of 65-73 Average Annual Compensation compounded on 1973 wages for 7 years.)

FIGURE I-1



1 "Lower Budget Cost of Living for Family of Four" , U.S. Bureau of Labor Statistics

2 Hypothetical placement and shape of curve -- hypothesis only.

3 Data based upon Federal Reserve Bank of Boston projections.

Source: Harbridge House, Inc.

HARBRIDGE HOUSE INC

Now it is not new to say that we have been losing manufacturing jobs, or that we have been gaining service jobs. And many analysts have always felt that service jobs paid low wages. However, what has not been put forward up to now -- and what is new -- is to say that the growth of service jobs has lowered people's incomes to the point where other members of the family have to look for work, thereby increasing our unemployment rate.[1] No wonder the state reported that last year the Massachusetts labor force grew 33 percent faster than the nation's labor force.[2]

Is it bad for people to look for work? In general, absolutely not! But this is not a general instance. People are looking for work in Massachusetts because of the deteriorating quality of the jobs with which Massachusetts is becoming progressively endowed. And the combination of lower-wage jobs and an increasing cost of living could be a central economic problem of Massachusetts. It is bad when people look for work because the jobs they do hold are not enough to keep pace with family income needs.[3]

1
To the extent that service jobs provide supplemental income, they serve to maintain or possibly increase family income. However, our contention is that this supplementation function may become a greater requirement in the years ahead because of the double squeeze from the increased cost of living and the structural shift of the economy to lower-wage service activities.

2
See, Mass Trends, Vol. 1, month 12, Data for December 1975, Massachusetts Division of Employment Security, p. 1. The Massachusetts labor force grew by 2.4 percent while the national labor force grew by 1.8 percent.

3
Massachusetts has always had one of the highest per capita incomes in the country so the suggestion that family incomes here are under unique pressure may come as a surprise. However, it should also be pointed out that at least in Metropolitan Boston, our state has the highest family budget requirements (and hence income needs) in continental United States. Also state-wide per capita income figures are defined as the total income divided by population. Aside from wages and salaries total income includes property income(interest, dividends and rents), proprietor's income (as from farming) and transfer payments. Not all of the state's residents' share equally in these types of income, yet that is the implication when they are all grouped and divided by population. Should Massachusetts have a notable proportion of its population receiving large amounts of property income, this would be reported in a manner that would boost per capita income or family income when in fact it is not received by all families or individuals.

Everyone has thought that our unemployment rate is "the problem". After all, for the last few years everyone of Massachusetts' eight major labor market areas had either substantial or persistent unemployment. No other state in the union equalled this dubious record.[1] Moreover, although Massachusetts is only two percent of the United States population, 1973 (February), it contained 20 percent of the country's areas of substantial unemployment. Nonetheless, our unemployment rate is not a "problem" so much as a "symptom" -- a symptom of the fact that we do not have enough good jobs.

What will happen if our problem is unaddressed. People could continue to look for second and supplemental jobs at a fast pace. Our unemployment could become progressively higher than the nation's. Our unemployment insurance charges to employers could rise further, making our state less competitive with other areas in holding the very high-wage manufacturing jobs we need most. Also, as the unemployment rate increases, employers who would therefore be in a buyer's market would tend to reduce wages or delay wage increases, thereby further aggravating the family income problem.

What can the state do about this problem?

To begin with -- and it is only a beginning -- the state can recognize that its problem is one of shrinking primary wage-earner income relative to the cost of living because of a shift in the economy toward lower-wage services. This recognition alone has within it the seeds of several fruitful policy directions -- some of which we know the state is already pursuing. Therefore the Commonwealth's priorities should be:

First. Lower the cost of living or slow the rise in the cost of living. Efforts to reduce energy costs in New England and efforts to reduce state taxes are steps in these directions. Slowing the cost of living would at least give us more time to deal with the effects of the on-going economic transformation.

1
U. S. Department of Labor, Bureau of Labor Statistics, February 1972 -- February 1974.

Second. Continue even more vigorously the existing effort to halt or slow the decline in manufacturing or construction jobs. This would keep more primary wage earners in higher-wage categories. As things stand now, workers are being forced into lower-wage services. At a minimum, if we continue to lose some manufacturing jobs, we should do all in our power to save the higher-wage manufacturing jobs.[1]

Third. Stimulate high-wage service jobs in wholesaling, transportation, communication, and utilities, and (probably with more relevance forBoston) in finance, insurance, and real estate. Today, these higher-wage service jobs along with production jobs make up half the state's jobs. However, they represented 60 percent just a few years ago, and we are losing ground with every year that passes. Also, the state can do the most with "Export" services and as yet there exists no competent and complete understanding of which services these are.

Fourth. Work with leaders in the retail trade and selected service sectors to see what can be done to restructure these jobs so that the

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1
It is important to note that manufacturing's hourly wages in Massachusetts are lower than those of the nation. See the Handbook of Labor Statistics 1973, Bureau of Labor Statistics, U. S. Department of Labor, Tables 99 and 105.

	Hourly Earnings of Manufacturing Workers	
	United States	Massachusetts
1966	$2.90	$2.57
1968	3.19	2.86
1970	3.55	3.23
1972	4.05	3.65

This strongly suggests that even in manufacturing, Massachusetts does have some relatively low-wage industries. We are indebted to Edward Moskovitch, Deputy Commissioner for Fiscal Affairs, Massachusetts Secretariat of Administration and Finance, for suggesting this point which our subsequent inspection confirmed.

worker is more productive, can receive more pay, and can have longer career ladders.[1] This will be a major burden for state vocational education and manpower policy. In one respect, it is fortunate that services are concentrated in a few activities because by working with our private leaders in

- commercial and stock savings banks;
- hospitals;
- grocery stores;
- department stores;
- health and allied services; and
- eating and drinking places,

the state could reach the employers of one out of five Massachusetts residents whose average pay is below the state's wages and below family budget requirements. There are other services that must be involved but these are the largest and thus are a logical starting point. Also, since the extent of Massachusetts' service transformation is extreme, our efforts in this regard could be a forerunner of such attempts for other parts of the country. Indeed, major federal funding may therefore be available for this effort.

(cont'd from p. 18)

Although wage levels in production are somewhat lower than the national average, this does not mean that we are especially likely to attract manufacturers back into the state who are looking for "cheap labor." For one thing, the industries which do pay low wages in our state still pay even lower wages in other areas. Secondly, labor cost is not the only factor in industrial location. Transportation, markets, labor skills and productivity are also important.

1 In manufacturing and construction, actual wages are generally greater than what could be "expected" based on the worker's previous employment experience, skill level, and educational level. The opposite is currently true in services, i.e., wages are lower than "expected." This is probably especially the case in Massachusetts because service employers have had such an abundance of labor available both from declining production activity and from the secondary effect of supplemental

Fifth. The state must continue to improve its data collection efforts. How is the state to know if its policies are working unless it can sort out the effects of the national economy; unless it can identify the previous jobs of those who are unemployed, the income of the primary wage earner, and especially the labor force participation of supplemental job holders and multiple job holders?

Sixth. Nothing should be done to disturb the growth of service activity in general, even such low-wage jobs as tourist-related ones. We now know what can happen when services have an off-year (pp. 52-55) and our unemployment rate is affected. Until we can understand services better and selectively stimulate service activities, nothing should be done to alter service sector growth.[1]

Seventh. We must take immediate steps to understand the causes of the shift in our economy toward service sector activity. If this report indicates that it happened, fine! But why? And why so drastically? Certainly this transformation has two sides to it. One is the dramatic reduction in manufacturing jobs. We have all heard about the high cost of doing business, the recession, the "poor climate" for business, etc. But the question remains, to what extent do these and other factors contribute to job reductions?

The second side of the coin: why have services grown? Can we be any more specific than just answering: "Because Massachusetts is a mature economy?"!

(cont'd from p.)
the wage income lost by production job reductions. The above discussion of "expected" wages is pursued in depth in Victor Fuchs, The Service Economy (New York: Columbia University Press, 1968), p. 135.

1
One often proposed meausre to re-direct development away from tourism is to spend the sums collected from the "room tax" on lodgings on non-tourish activities. Another means of effecting tourism is the exercise of rigorous coastal zone management and other tourist-limiting state land use policies. Perhaps the major influence on the location and pace of tourism, however, are state highway decisions.

The above are broad directions, and do not constitute a detailed policy statement. There are conflicts and trade-offs to be sure, and they are anything but easy to decide. Does the state subsidize rail lines (that will be abandoned by the Federal rail plan) in order to stem the decline of manufacturing jobs? Or should it choose not to do this so as not to hike state taxes and hence the cost of living? In short, it is far easier for someone to suggest what should be done than for someone to actually do it. In the short run especially there are limitations as to what can be done (because of the state's delicate fiscal condition). And there are limitations as to the effectiveness of anything that is done (because of the national recession).

However, time and trends are not in our favor. A delay now will cost us later. Even an upturn in our national economy that would reduce unemployment rate would do nothing to eradicate our own central economic dilemma. We cannot hope for the national economy to "bail us out on this one." There will still be a gap between our unemployment rate and that of the nation. There will still be a need for supplemental wage earners to boost family income. Over the years, the status quo will only increase that gap, reduce wage income, and increase unemployment.

We need to begin immediately what Secretary Smith has called a quest for the "long-term solutions." We will have to work with the business community. We must have a comprehensive management program, and we will definitely need the data to let us know when, as, and how the program is working.

II. OVERVIEW OF SERVICE ACTIVITIES

A. Massachusetts Service Activities in the Context of the Regional and National Economy

The U. S. economy has for a long time been experiencing a structural shift which has resulted in a redistribution of employment toward those industries providing services and away from those producing physical commodities.[1]

Massachusetts has been following much the same pattern as the U.S. That is, it has been experiencing a similar trade-off of goods-producing employment for service-producing employment. However, this transition has been occurring at a much more rapid rate from 1960 to 1973.

1
In comparing employment trends in Massachusetts to that of the nation, we have referred to Employment and Earnings Data, which is an estimate of all non-agricultural employment. This estimate includes both workers who are covered by unemployment insurance and those who are not. Mining, construction, and manufacturing shall be considered goods-producing industries. The service-producing industries, in this case, shall be a reference to the all-service sector as we have already defined it.

TABLE II-1
EMPLOYMENT SHIFTS IN MASSACHUSETTS
COMPARED TO THE NATION AS A WHOLE

Type of Industry	United States 1960	United States 1973	Massachusetts 1960	Massachusetts 1973
production employment[a]	38%	32%	41%	31%
service employment	47%	50%	46%	54%

[a] Includes mining and construction as well as manufacturing.

Source: Harbridge House Inc., based upon data from the U.S. Department of Labor, Employment and Earnings, 1939-72; Employment and Earnings, 1909-72; and Employment and Earnings, May 1974. Percentages do not add to 100 because government employment has been deleted.

In 1960, 38 percent of the workers in the United States were required in the production of goods. However, in 1973 the percentage of workers who were goods producers had declined to 32 percent. During this same time, Massachusetts' goods-producing employment base had declined from 41 percent to 31 percent. In other words, Massachusetts had a larger share of goods-producing activities in 1960 than the country as a whole, but the Massachusetts economy subsequently shifted faster and farther away from goods production than did the nation.

The United States has increased its share of service employment from 47 percent to 50 percent from 1960 to 1973. At the same time Massachusetts' service employment increased from 46 percent to 54 percent of total jobs. Again, the Bay State has shifted faster and farther than the national economy--a fact which would hardly be surprising to most of us.

However upon closer inspection the shifts in Massachusetts do seem unique.

Part of the difference in the rate at which service industries are expanding their relative size is due to the behavior of manufacturing. On the national level, manufacturing has been increasing in the absolute number of employed, while experiencing a decline of its relative share of total employment. Massachusetts' production jobs, as everyone knows, are also assuming a lesser role in the overall employment picture, but here we have a decline in the absolute number of manufacturing jobs.

A different vantage point, showing just how strong a decline this has been, can be seen in the distribution of employment increases that were achieved in the 1960-73 period.

TABLE II-2
DISTRIBUTION OF NEW JOBS 1960-1973, BY SECTOR
IN MASSACHUSETTS AND THE NATION AS A WHOLE

Type of Industry	Percentage share of new jobs	
	U.S.	Mass.
production employment[a]	17%	(11%)
service employment	58%	89%

[a] Includes mining and construction as well as manufacturing.

Source: Harbridge House Inc., based upon data from the U.S. Department of Labor, Employment and Earnings, 1939-72; Employment and Earnings, 1909-72; and Employment and Earnings, May 1974. Percentages do not add to 100 because government employment has been deleted.

Table II-2 shows how dependent upon services job growth has been in Massachusetts. Out of all new jobs that were created in the 1960-73

period 89 percent were in services but minus 11 percent were in manufacturing. Whereas (at the national level) nearly 60 percent of the new jobs were in services, and nearly 20 percent were in manufacturing.

One might argue that Massachusetts' service transformation would obviously appear drastic compared to the rest of the nation, and that the state really ought to be compared to other similar industrialized states. In fact, when compared with a sample of seven other such states, Table II-3 shows that no state shifted toward service-orientation more than Massachusetts.

TABLE II-3
THE SHARE OF SERVICE EMPLOYMENT
IN MAJOR NORTHERN STATES 1960-1973

	Percentage of Service Employment							
	Mass.	N.Y.	Penn.	Md.	Del.	Ill.	Ohio	Mich.
1960	46%	52%	44%	48%	43%	48%	42%	40%
1970	54%	56%	47%	55%	48%	50%	46%	44%
Percentage point difference 1960-1970	8%	4%	3%	7%	5%	2%	4%	4%

Source: Harbridge House Inc., based on data from U. S. Department of Labor, Employment and Earnings, 1939-72 and Employment and Earnings, May, 1974.

Moreover, if we again think of all the new jobs that were created in the 1960 to 1973 time period, Massachusetts stands out again, for unlike other industrialized states, a full 80 percent of its new jobs were in services. Table II-4 shows that none of the other states, not even New York, had a figure over 67 percent.

Economic transformation to services is occurring comparatively quickly, certainly faster than the transformation nationally. Perhaps more

TABLE II-4

PERCENTAGE CONTRIBUTION BY SECTOR TO NEW JOBS IN THE 1960-1973 TIME PERIOD IN INDUSTRIALIZED NORTHERN STATES

	Mass.	N.Y.	Penn.	Md.	Dela.	Ill.	Ohio	Mich.
Percentage of New Growth contributed by each sector 1960-1973[a]								
Production Employment	0	0	9	8	24	15	19	25
Service Employment	80[b]	64[b]	63	67	57	57	60	53

a
Government sector employment is omitted so percentages do not add up to 100%.

b
Massachusetts and New York were the only states to have experienced absolute declines in production employment. In the case of Massachusetts, for example, while the rest of the economy added 481,000 jobs gross, production sectors experienced a loss that brought the net new total jobs to only 433,000. The 80% figure for Massachusetts and the 64% figure for New York refer to the gross addition. In all other states, the percentages also refer to the gross addition of jobs. Also, the Massachusetts figures in this table are not the same as those in Table II-2, p. for the above reasons.

c
This includes mining and construction as well as manufacturing.

Source: Harbridge House Inc., based on calculations from Data in U. S. Department of Labor, Employment and Earnings 1939-1972 and Employment and Earnings May 1974.

significantly, the speed of our state's transformation is unique even among major industrialized states in the northeast. In short, the above data suggest that Massachusetts' shift to a service economy does not parallel similar shifts nationally and it is not identical to shifts occurring in other mature industrialized states.

B. Services Within the Massachusetts Economy

As we might suspect from the foregoing discussion, there have been several substantial shifts within the Massachusetts economy.

The largest shifts in employment occurred in Manufacturing and Selected Services [1] (see Tables II-5 and II-6). Manufacturing, which accounted for 43 percent of the state's total employment in 1960 (see Table II-7), only accounted for 32 percent in 1973. However, Selected Services exhibited an increase in their share of the state's employment level. In 1960, Selected Services employed 15 percent of the state's job holders, and in 1973 this amount had risen to 22 percent. The only other sectors which exhibited slight shifts in their share of employment were: Construction, Wholesale and Retail Trade, and Finance, Insurance and Real Estate.

The two major sectors of Wholesale and Retail Trade and Selected Services, alone, accounted for 49 percent of the state's total employment. It is in these two categories of the service sector in which significant shifts in the percent distribution of total state employment did occur. The increase in the relative importance of the all-service sector is directly attributable to these two sectors, rather than to any great changes in Transportation, Communication, and Public Utilities and Finance, Insurance and Real Estate.

All of the major economic sectors indicated positive results of growth in employment from 1960 to 1973, except for manufacturing. Manufacturing, which was once a very dominant force in the state's economy, had its employment level decline 10 percent from 1960 to 1973. All other sectors (except mining) showed positive growth, with the greatest growth rate of 75 percent occurring in the Selected Services.

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1 This is a sub-sector of the Service Industry predominantly comprised of medical, legal, private educational and entertainment/cultural employment.

TABLE II-5

THE CHANGE IN EMPLOYMENT BY MAJOR SECTORS FROM 1960 to 1973 in MASSACHUSETTS

	1960 Employment	1973 Employment	No. Change in Employment 60-73	% Change in Employment 60-73
Agriculture	8,085	9,203	1,118	14%
Mining	1,149	840	(309)	(27%)
Construction	78,238	107,793	29,555	38%
Manufacturing	695,600	628,068	(67,532)	(10%)
Service Sector				
Transportation	94,191	117,584	23,393	25%
Trade	386,573	523,332	136,759	35%
Finance	98,201	130,878	32,677	33%
Selected Services	249,634	436,074	186,440	75%
State-wide Total	1,611,671	1,953,772	342,101	21%

Source: Harbridge House, Inc., Calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summaries 1960 and 1973, Division of Employment Security, Boston, Massachusetts.

TABLE II-6

NET NUMBER OF JOBS ADDED TO THE
MASSACHUSETTS ECONOMY 1960-1973

	Net jobs 1960-1973
All service sectors: (selected service: +186,000)	+ 379,000
All production sectors: (manufacturing: -67,500)	- 37,000
TOTAL ALL SECTORS	+ 342,000

Source: Harbridge House, Inc., Calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summaries 1960 and 1973, Division of Employment Security, Boston, Massachusetts.

TABLE II-7
PERCENTAGE OF EMPLOYMENT BY
MAJOR SECTORS IN MASSACHUSETTS
1960 - 1973

Economic Sector	1960	1973	% Growth 60-73
Production Employment			
Agriculture	1%	1%	14%
Construction	5	6	38
Manufacturing	43	32	(10)
Service Employment			
Transportation, communication, utilities	6	6	25
Wholesale and retail trade	24	27	35
Finance, Insurance and real estate	6	7	33
Selected services	15	22	75
TOTAL	100%	100%	21%[a]

[a]State-wide average percentage increase.

Note: We have used our estimated 1960 figures for Finance, Insurance and Real Estate and services in order to obtain 1960 percentages and employment growth from 1960-1973. This was done to compensate for the large changes in coverage in these sectors. See Appendix III-1 for further explanation.

Source: Harbridge House, Inc., based upon calculations on data from "Employment and Wages in Establishments Subject to Massachusetts Employment Security Law" State Summaries 1960 and 1973, Massachusetts Division of Employment Security.

Of the non-service sectors, only construction with a modest increase in share of total state employment from 5 to 6 percent, fulfilled this requirement. The relatively larger growth rates of the various components of the all-service sector, highlights a trend which clearly indicates the state's shift into a service economy. In 1960, the service sector provided for one out of every two jobs in the state, and in 1973, this ratio had increased to two out of every three jobs.

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Source: Harbridge House, Inc., Calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summaries 1960 and 1973, Division of Employment Security, Boston, Massachusetts.

and accessory dealers" (SIC 553). Curiously, NPA, like other sources public and private, do disaggregate their data in the case of manufacturing activities. This differential coverage of manufacturing and services is probably supportive if not indicative of what has been identified elsewhere as an implicit bias in economic affairs for manufacturing rather than service activity.[1]

Another source of employment projections is the Massachusetts Division of Employment Security (DES).[2] DES does provide a very detailed breakdown of service activities and projects through to 1980.[3] Basically, the DES believes that there will be a moderation in the growth rates of all services except selected services. In this category, the DES believes that the labor intense educational and medical fields will expand substantially and that their employment levels will not be adversely affected by technological displacement.

The third source of projections is the Federal Reserve Bank of Boston (FRB). These figures like those of NPA deal only with the major groupings or sectors within services, but these projections to 1980 are reproduceable here. In general, the FRB believes that services will experience a slowing down of their recent employment growth primarily because the state has

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1
Center for Economic Projections, National Planning Association, State Economic and Demographic Projections to 1975 and 1980. Report No. 70-R-1, National Planning Association, 1970.

2
See Harrison, op. cit., pp.

3
Massachusetts Division of Employment Security, "Manpower Requirements for Massachusetts by Occupation, by Industry 1970-1980."

"caught up" to the service development that other states experienced earlier in this century. While this hypothesis does not appear to coincide with the information that Harbridge House has developed on an inter-state basis, this FRB viewpoint is cogently argued in recent publications.[1]

Because all of the above sources (FRB, DES and NPA) provide generalized and differing projections, and because none allocated their projected employment within the state, the future picture of service activity is still not clear. The trend is generally upward, especially in selected services and in finance insurance and real estate. Yet a detailed incication of the future employment still is not available.

We have provided no future projection here, but in order to sharpen the appreciation for the growth that has occurred in the 1960-73 time period, and how this relates to existing projections, we have developed some "extensions" of the 1960-70 employment growth rates to 1980. Service employment in 1980 will likely differ from these "extensions." Indeed, because of the Federal Reserve Banks' hypothesis and because of the national recession, we would imagine that our extensions overstate the growth that will occur by 1980.

However, when our extensions (which are corrected for 1972 coverage changes, see Appendix III) are compared with the FRB and DES projections, these extensions appear comparable (see Table III-3). In fact, the DES and FRB figures show covered and uncovered employment, while our extensions show only employment covered by unemployment insurance. In order to make our figures really comparable we would have to estimate some additional figure for uncovered employment. Our linear extensions of past growth will be discussed later in the section on location.

Focusing upon the DES and FRB projections in Table III-3, the latter's figures are appreciably lower than DES estimates except for the

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1
Fredrick B. Glantz, "New England's Employment Growth: 1971-1980" in New England Economic Indicators, July 1974, pp. 2-5.

TABLE III-1
SERVICE ACTIVITIES EMPLOYING 10,000 WORKERS OR MORE, MASSACHUSETTS 1973

		Percentage Growth 1960-1973	Percentage of Total State Covered Employment
Transportation			
421	Trucking, local and long distance	22%	1.39%
481	Telephone communication	37	1.86
491	Electric Companies & Systems	7	.63
	Sub-total		3.88
Trade			
599	Retail stores N.C.C.	93%	.76
506	Electrical Goods	81	.69
508	Wholesale Machinery, equipment and supplies	72	1.24
581	Eating and drinking places	70	5.25
531	Department stores	56	2.73
503	Dry wholesale goods and apparel	49	.50
554	Gasoline service stations	41	.81
541	Grocery stores	27	2.91
509	Miscellaneous wholesalers	15	1.98
551	New and used car dealers	14	1.02
591	Drug stores and proprietary stores	10	.71
504	Groceries and wholesale-related products	1	.91
	Subtotal		19.51
Finance, Insurance, Real Estate			
602	Commercial and stock	62	1.57
603	Mutual Savings Banks	51	.52
641	Insurance agents, brokers and services	45	.61
631	Life insurance	30	1.30
633	Fire, Marine and casualty insurance	(1)	.71
	Sub-total		4.71
809	Health and allied services, N.C.C.	339	2.18
734	Services to buildings	156	.58
739	Miscellaneous business services	137	2.48
801	Office of physicians and surgeons	107	.55
806	Hospitals	106	4.68
794	Misc. amusement and recreation services	89	.60
891	Engineering and architectural services	79	.90
822	Colleges and universities	46	2.66
701	Hotels and motels	39	.87
721	Laundries and dry cleaning	(32)	.56
864	Civic and Social Associations	8	.64
			16.70

Source: Harbridge House, Inc. based on calculations from "Employment and Wages in Establishments subject to the Massachusetts Employment Security Law" state summaries 1960-1973 Massachusetts Division of Employment Security.

TABLE III-2

THE TEN LARGEST SERVICE ACTIVITIES, MASSACHUSETTS, 1973

SIC number[a]		Percentage of Total State Covered Employment[b]		Percentage of Growth 1960-73[c]	
Transportation, Communication, Utilities					
481	Telephone Communication	1.86		37	
	Sub-total		1.86		37%
Wholesale and Retail Trade					
581	Eating & Drinking Places	5.25		70	
541	Grocery Stores	2.91		27	
531	Department Stores	2.73		56	
509	Miscellaneous Wholesalers	1.98		15	
	Sub-total		12.87		45%
Finance, Insurance, and Real Estate					
602	Commercial and Stock Savings Banks	1.57		62	
	Sub-total		1.57		62%
Selected Services					
806	Hospitals				
822	Colleges and Universities				
739	Miscellaneous Business Services				
809	Health and Allied Services				
	Sub-total	12.0		113%	
	Total	28.3		68%[d]	46%

a The SIC number is the Standard Industrial Classification code, as defined in the 1967 edition of the Standard Industrial Classification Manual prepared by the Office of Statistical Standards, Bureau of the Budget, Executive Office of the President

b This is the percentage of total state employment which is covered by the Massachusetts Employment Security Law.

c

SIC's 806, 822 and 809 are industries which had coverage changes. Therefore, the growth rates of these industries are based on our 1960 estimated levels of employment. See appendix for methodology used in coverage change situations .

d

The state's average growth for the service sector was 46%.

Source: Harbridge House, Inc., based on calculations from Employment Wages in Establishments Subject to the Massachusetts Employment Security Law State Summaries 1960 and 1973, Massachusetts Division of Employment Security.

sector of finance, insurance and real estate, where there appears to be virtual agreement. The sector that is apparently the most troublesome to predict is selected services, where there is the greatest difference between the two projections. Future employment levels in services as a whole may be most dependent upon whose hypothesis is correct. Has our state caught up to the rest of the country as the FRB posits or will we experience prodigious growth in education and medicine and thus show continued strong growth in services as the DES believes?

B. The Quality of Service Jobs

Job quality is certainly a broad phrase and is defined, no doubt, in a great many (worthy) subjective and non-quantifiable terms. White-collar jobs, for example, are sometimes considered more desirable because they are "desk jobs," frequently in pleasant, air-conditioned surroundings, and require none of the physical exertion of some production activities.

Yet there are important quantifiable criteria which measure job quality. Seasonality suggests the percentage of employment facing temporary layoffs during the year because of wide fluctuations in business activity. Cyclicality is a measure indicating how sensitive to national economic downturn certain activities are. There are other considerations. To what extent does an activity attract out-of-state dollars? How many of the state's currently unemployed come from certain sectors of the economy, and which activities are high labor turnover industries? How much of service employment is "white-" or "blue-collar" and does this suggest new roles for vocational education?

Probably the most important single criterion of job quality, however, is average yearly earnings. For the individual, no other job characteristic can do more to expand life's possibilities. High wages are the single most effective means of lessening the incidence (and governmental cost) of our major societal problems in education, health and housing. High wages speak directly to the concerns of career expectations, to the risks of unemployment or welfare dependency.

TABLE III- 3
PROJECTIONS OF SERVICE EMPLOYMENT TO 1980 COMPARED TO
EXTENSIONS OF PAST GROWTH RATES TO 1980

	1960 Employment[a]	1973 Employment[a]	Linear Extension of 1960-1973 growth to 1980[b]	Federal Reserve Bank Projections to 1980[c]	DES Projections to 1980[d]
Transportation, Communication, Utilities	105,900	122,700	132,500	121,400	145,000
Wholesale/Retail Trade	386,600	522,200	616,100	568,500	580,500
Finance, Insurance and Real Estate	99,500	134,300	152,700	149,600	149,700
Selected Services	291,200	490,600	588,700	626,500	756,300
All Services	883,200	1,269,800	1,490,000	1,466,000	1,631,500

a
Source: Bureau of Labor Statistics, Employment and Earnings.

b
Source: Harbridge House, Inc., based only upon compounded extensions of observed growth rates between 1960 and 1973 and corrected for coverage charges that occurred in 1972. Employment extensions to 1980 appearing on Table III-33 do not correspond to this data because they are not corrected for coverage changes. It was not possible within the scope of this study to correct for coverage changes in the data for the eight Major Labor Market Areas. Therefore, uncorrected state data was used on Table III-33 for comparison purposes.

c
Source: Federal Reserve Bank of Boston unpublished data. Our thanks to Fredrick Glantz for making his work for the FRB available to us.

d
Source: Massachusetts Division of Employment Security, Manpower Requirements for Massachusetts by Occupation, by Industry, April, 1974.

1. Wage Levels

Services, which employ 62 percent of our work force, pay nearly $1,000 below the average gross wage (see Table III-4). If we debate the relatively high wage transportation and finance sectors, the remaining services represent half of the state's total employment, and pay about $1,500 below average, about $2,500 less than the next nearest sector, manufacturing.

There is another way of looking at this issue. If we divide the state into production workers and service workers, the former comprise less than 40 percent of the employed but they earn over $9,800. In contrast, service workers comprise over 60 percent, but they earn only about $7,500.

TABLE III-4
COMPENSATION BY SECTOR, MASSACHUSETTS
1973

SECTOR	Average Annual Compensation/Employee	Percentage of Total State Covered Employment
Production Employment		
Construction	$11,500	6%
Manufacturing	9,450	32
Sub-total	$ 9,800	38%
Service Employment		
Transportation	$10,650	6%
Trade	6,600	27
Finance	9,100	7
Selected Services	7,400	22
Sub-total	$ 7,550	62%
TOTAL	$ 8,400	100%

Source: Harbridge House Inc., based on calculations from "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summary 1973, Massachusetts Division of Employment Security.

Of course some services do pay high wages.[1] When we categorize services by their wage levels we find that activities comprising 7 percent of total state employment pay significantly high wages, but, unfortunately, activities that employ 24 percent or about one out of four Massachusetts workers pay significantly low wages (Table III-5).[2] Worse still, the larger low-wage services have been growing much faster than the small high-wage services. Indeed it almost appears that the lower the wage, the faster the growth. The implications are as ominous as they are obvious. The uniquely rapid transformation of Massachusetts to a service economy has been occurring via the accelerated growth of large segments of low-wage activities. Further, these already low-wage activities may pay relatively less in the future.

In developing much of the information on wage levels, we computed past trends, many of which yielded few points of significance. However, one such "trial run" shed a great deal of light on the recent performance of low-wage activities--their wage levels have been increasing slowly even if their employment rolls have been rapidly rising. Conversely, certain higher-wage services have experienced strong wage increases even if their employment rolls have not increased as quickly. Table III-5 shows our isting of the dominant service industries--those that had 10,000 or more employees in 1973. In 1960, eleven dominant activities had severely low wages. Their compensation levels increased at a (current dollar) rate

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1
Each service activity, whether at the 2- or 3-digit level of detail, is shown with its wages and growth rates in working appendices to this report now on file in the Library of Massachusetts Division of Employment Security.

2
Significantly high or low is here defined as being one standard deviation above or below the mean.

TABLE III-5

COMPENSATION, SHARE OF TOTAL COVERED EMPLOYMENT AND GROWTH RATES WITHIN SERVICES, MASSACHUSETTS 1973

Service Sector Activities by Yearly Compensation	Percentage of total State Covered Employment	Employment Growth Rate 1960 - 1973
Significantly high[a] ($11,200+)	7%	39%
Moderately high ($8500-$11,200)	17	38
Moderately Low ($5800-$8500)	14	47
Significantly Low[a] ($5800 -)	24	60
TOTAL OF SERVICES	62% Share	46% Increase

[a] Significantly high or low is defined as being one standard deviation above or below the mean.

Source: Harbridge House Inc., based upon calculations from "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summary unpublished. Massachusetts Division of Employment Security 1973.

TABLE III-6
COMPENSATION CHANGES 1960-73 IN SERVICE ACTIVITIES
EMPLOYING 10,000 WORKERS OR MORE, MASSACHUSETTS

SIC Number	Service Activity	Average Annual Wage 1960	Average Annual Wage 1973	Percentage Increase In Wages 1960-1973	Percentage State Covered Employment
531	Department Stores	$2,897	$5,049	74%	2.73%
541	Grocery Stores	3,221	5,529	72	2.91
554	Gasoline Service Stations	2,589	5,032	94	.81
581	Eating and Drinking Places	2,274	3,462	52	5.25
591	Drug Stores	2,676	4,779	79	.71
599	Retail Stores	3,365	5,633	67	.76
701	Hotels and Motels	2,659	4,237	59	.88
721	Laundries and Dry Cleaning	2,984	5,156	73	.56
734	Services to Buildings	2,178	3,951	81	.58
794	Misc. Amusement and Recreation Services	3,146	5,546	76	.60
801	Offices of Physicians and Surgeons	2,855	13,177	362	.55
806	Hospitals	2,912	7,545	159	4.68
809	Health and Allied Services	2,572	4,569	78	2.18
864	Civic and Social Associations	2,070	4,634	124	.64
	Low Wage Total/Average			73%	23.84%
421	Trucking	5,177	11,250	117	1.39
481	Telephone Communications	5,180	10,951	111	1.86
491	Electric Companies and Systems	6,352	13,563	114	.63
503	Wholesale Trade of Drygoods and Apparel	5,516	9,139	66	.50
504	Wholesale Groceries	5,087	9,537	87	.91
506	Wholesale Trade Electrical Goods	5,396	10,809	100	.69
508	Wholesale Machinery and Supplies	6,412	11,369	77	1.24
509	Misc. Wholesale	5,711	11,357	99	1.98
551	New and Used Car Dealers	5,127	10,364	102	1.02
602	Commercial and Stock Savings Banks	4,372	8,216	88	1.57
605	Mutual Savings Banks	4,492	8,202	83	.52
631	Life Insurance	5,333	9,423	77	1.30
633	Fire, Marine, Casualty Insurance	4,775	9,004	89	.71
641	Insurance Agents	4,685	9,712	107	.61
739	Misc. Business Services	5,718	8,949	57	2.48
822	Colleges and Universities	3,423	8,895	160	2.66
891	Engineering and Architectural Services	7,264	13,128	81	.90
	High Wage Total/Average			113%	20.97%

Source: Harbridge House, Inc. calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law" State Summaries 1960 and 1973. Massachusetts Division of Employment Security.

of 73 percent. However, the wages in other dominant activities grew by 113 percent (current dollars over the same thirteen-year period)! To summarize: wage differentiation in services is becoming more pronounced over time. Low-pay jobs have become lower-pay jobs as the wage gap widens.

The low-wage/low-wage-growth industries include:

department stores
grocery stores
gasoline service stations
eating and drinking places
drug stores
retail stores (not elsewhere classified)
hotels and motels
laundries
services to buildings
miscellaneous amusement services
health and allied services

The above constituted one out of every five jobs in the state in 1973. They often appear in lists that enumerate sources of sub-employment or under-employment. They also have certain characteristics that are not shared by higher-wage activities. Large proportions of their workforce are unskilled, few are unionized, a large proportion of their employees are women, and their job turnover is very high.

In fact, this last feature was recently examined by Professor Barry Bluestone of Boston College and found to be significantly involved in an explanation of why welfare caseloads have been increasing. Bluestone's significantly low-wage/high-turnover industries are found in the ranks of the above.[1]

To the extent that these low-wage activities provide supplemental earnings, they provide a positive benefit. However, to the extent that the economy as a whole is shifting toward these jobs, progressive amounts of primary wage earners may require supplemental earnings in the future. The basis for employment in our economy would therefore also shift away from a desire for supplemental income and toward a requirement for supplemental income (see Part I-C above) largely because of a shift in the kinds of activities in our economy.

1
Bluestone, op. cit.

Before leaving the issue of wages it must be recalled that we earlier identified 10 specific service activities that accounted for surprisingly large amounts of statewide employment. Wage levels are an especially important issue for these activities because they hold such a concentration of jobs, such strategic influence over the economy. Table III-7 shows that the wage implications of these largest employees are only slightly better than the poor performance of services as a whole. Again the lower-wage activities provide far more employment (about 20 percent of the state jobs) than the high-wage activities (about 9 percent), and they have grown quite a bit faster. The one small consolation is that moderately high-wage service jobs have also grown quickly.

2. Unemployment Experience

One might think that with its relatively low wage levels, services would contribute substantially to the ranks of those collecting unemployment compensation. However, the partial data available does not indicate this. Table III-8 shows that transportation, trade, finance and selected services represent 62 percent of covered employment but account for only 45 percent of those receiving unemployment compensation in 1973.

One explanation for this underrepresentation could simply be that manufacturing and construction were simply more affected by the national and regional economies of 1973. Those who receive compensation usually have to wait four to eight weeks and therefore these data might also be suggesting that unemployment in construction and manufacturing is longer-term

TABLE III-7
THE TEN LARGEST SERVICE ACTIVITIES IN MASSACHUSETTS
BY COMPENSATION AND BY EMPLOYMENT GROWTH RATES

		Average Wage 1973	Percent of Total State Employment	Percent Growth 1960-1973
High				
481	Telephone communication	10,950	1.86	37%
509	Miscellaneous wholesalers	10,530	1.98	15
	Subtotal	10,650	3.84	25
Moderately High				
739	Misc. business services	8,950	2.48	137%
822	Colleges and universities	8,900	2.66	46
	Subtotal	8,900	5.14	79
Moderately Low				
602	Commercial and stock savings banks	8,200	1.57	62%
806	Hospitals	7,550	4.68	106
	Subtotal	7,700	6.25	93
Low				
541	Grocery stores	5,550	2.91	27%
531	Department stores	5.050	2.73	56
809	Health and allied services	4,600	2.18	339
581	Eating and drinking places	3,450	5.25	70
	Subtotal	4,450	13.07	71
	Grand Total	6,800	28.30	68%

Source: Harbridge House Inc., based on calculations from Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law. State Summaries 1973 and 1960, Massachusetts Division of Employment Security.

TABLE III-8

MOST RECENT INDUSTRY ATTACHMENT OF THOSE COLLECTING UNEMPLOYMENT COMPENSATION IN MASSACHUSETTS, 1973[a]

Sector	Percentage of Collecting Unemployed[b]	Percentage of Total Covered Employment[c]
Construction	18.6%	5.5%
Manufacturing	30.9	32.2
Transportation	3.9	6.0
Trade	20.8	26.8
Finance	4.1	6.7
Selected Services	16.5	22.3
Other including Government	5.1	-
TOTAL	100.0%	100.0%

a
According to DES officials, this represents only about half of the unemployed.

b
Source: Harbridge House Inc., calculations based on "Annual Summary Characteristics of Insured Unemployed, Mass. 1973, Massachusetts Division of Employment Security.

c
Source: Harbridge House Inc., calculations based on "Employment and Wages in Establishments subject to the Massachusetts Employment Security Law", State Summary 1973. Massachusetts Division of Employment Security.

unemployment. In short, these data reveal those who remain unemployed, not those who become unemployed for short periods. Moreover, these data only cover about 50 percent of those who are counted in the unemployment rate.[1] If the high labor turnover and quit rates that have been rated in service activity independently by Bluestone, Sum and Harrison actually exist, then the above data could be misleading. In any case, the question is still an open one that will require further information.

3. Sensitivity to the National Business Cycle

In The Service Economy, Victor Fuchs presented an in-depth statistical analysis of the historical response of U.S. industries to cyclical fluctuations.[2] His principal finding was that the Service industries were much more insensitive to the business cycle fluctuations. One of the major reasons for this difference in response is due to their types of output. The important difference between production output and service output is that production output can be stored, and service output cannot. Therefore, the rate of purchase of production output may exhibit cyclical fluctuations in response to changes in those factors affecting investment in inventories.

In order to see if the service industries in Massachusetts really do exhibit an insensitivity to the business cycle, we have examined the recessionary period from 1969 to 1971. We realist that this period will only give us an indication of employment change resulting from a mild recession, and

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1
Division of Employment Security officials indicate there is no source of data on the industrial attachment of the other 50 percent.

2
The Service Economy, Victor R. Fuchs, National Bureau of Economic Research, New York, 1968, pp. 158-162.

this will not necessarily be an indication of what will occur in the course of a severe recession, similar to the one we are now in.

During the recessionary period from 1969 to 1971, Massachusetts' total employment suffered a decline of 3.5 percent. Total state employment suffered a decline of 1 percent from 1969 to 1970, and then suffered its serious decline of 2.5 percent from 1970 to 1971. After its lowest level of employment in 1971, the state began its recovery, and achieved an increase in total employment in 1972.

The economic sectors of the economy behaved in the following manner during this recessionary period:

PERCENTAGE CHANGE IN EMPLOYMENT
IN MAJOR ECONOMIC SECTORS
DURING RECESSIONARY PERIOD 1969-71

	Constr.	Mfg.	Trans.	Trade	Finance	Sel. Serv.
1969-70	.6	(5.0)	3.1	1.6	3.4	.3
1970-71	2.2	(7.9)	(.3)	.9	.6	.4
Av. Annual Growth Rate 1960-73	3	(.1)	2	3	3	6

As might be expected, production industries exhibited the greatest sensitivity to this recession, while the service industries reacted only mildly to the recession. Manufacturing employment declined by 5 percent and 7.9 percent during this recession. Although manufacturing had been experiencing an overall decline, this decline was likely aggravated by the recession. The single decline which did occur in the all-service sector was experienced by Transportation, Communications and Public Utilities. This sector declined by only .3 percent. The service industries in Massachusetts,

therefore, do seem to be more stable over the business cycle than do the production industries.

Yet, we have also found that they play a critical role in our overall economic performance during a recession. Massachusetts has in recent years had a slightly higher unemployment rate than the nation as a whole, but in 1971 and since then Massachusetts experienced sharply higher unemployment.

TABLE III-9
A COMPARISON OF SEASONALLY ADJUSTED
UNEMPLOYMENT RATES FOR
THE UNITED STATES AND MASSACHUSETTS, 1965-72

	Massachusetts	U.S.	Ratio of Mass. to U.S.
1965	4.9%	4.5%	109
1966	4.2	3.8	110
1967	4.0	3.8	105
1968	3.6	4.0	111
1969	3.5	3.9	111
1970	4.9	5.2	106
1971	5.9	7.0	119
1972	5.6	7.1	127

Source: Harbridge House Inc., based upon Mass Trends, Vol. 9, No. 12, January 1974 data for December 1973. Based on former employment series--not comparable with series in Table III-9.

Table III-9 shows that the Mass./U.S. ratio was consistently between 105 and 111, but in 1971 it shot up (from 106) to 119 and the following year to

127. If we look at net changes year-to-year we can see what actually happened beginning in 1971.

TABLE III-10
YEAR-TO-YEAR CHANGES IN LABOR FORCE,
EMPLOYMENT AND THE NUMBER OF UNEMPLOYED
MASSACHUSETTS 1971-73

	Labor Force	Employment	Number of Unemployed
1971	+ 7,000	-42,000	+49,000
1972	+ 27,000	+30,000	- 3,000
1973	+ 76,000	+65,000	+11,000
actual cumulative change	+110,000	+53,000	+57,000
hypothetical cumulative change[a]	+110,000	+95,000	+15,000
		difference	42,000

[a] Change if decline in jobs in 1971 did not occur and if instead there was a net change of zero

Source: Harbridge House Inc., based upon data from Mass Trends, Vol. 1, No. 1, 1974. Based on new procedures for employment estimation as indicated in source. These are not supposed to change the statewide figures so much as the major labor market sub-areas.

In 1971, Table III-10indicates that our labor force grew by a modest 7,000 job-seekers. However employment dropped by 42,000 jobs, giving the state an additional 49,000 unemployed people. The following year employment grew faster than our labor force and as a result the

number of unemployed declined by 3,000. 1973 brought back strong growth in the number of job openings and considering our smaller labor force we were probably fortunate in having 1973 contribute 11,000 to the jobless rolls. The bad year then was 1971, a year of national "stagflation" which caused us to come out of the 1971-73 period with 57,000 new jobless people. What would have happened if in 1971, instead of experiencing a 42,000 employment drop, Massachusetts had experienced a zero increase? We would have had 42,000 fewer jobless than we actually had, and our state unemployment rate would have been about two percentage points lower--about 5 percent instead of close to 7 percent in 1973.

What was the performance of the service sector during this critical period? Employment in services is likely to be less sensitive to the national business cycle than employment in construction or manufacturing. Yet the growth of services <u>was</u> affected by the stagflation. Table III-11 shows that services, which were growing by nearly 3 percent per year, declined <u>in their rate of growth</u> to nearly a half percent in 1971.

TABLE III-11
ANNUAL GROWTH IN SERVICES IN MASSACHUSETTS
1970-1973

	year to year percentage increase in service jobs	year to year increase in the number of new service jobs
1970	2.72%	32,000
1971	.41	5,000
1972	2.39	29,000
1973	2.90	36,000

<u>Source</u>: Harbridge House Inc., based upon "Massachusetts Annual Statewide Workforce Report," 1970, 71, 72, 73, U.S. Department of Labor, Bureau of Employment Security, Form ES-219E.

Service's slow growth rate in 1971 meant that Massachusetts received 5,000 jobs instead of 32,000 the year before. This is a difference of 27,000 jobs.

Now, recalling the 42,000 job loss that the economy experienced in 1971 (Table III-10). the performance of the service sector helps to explain a great deal of it. It is not that services contributed 65 percent (27,000 ÷ 42,000) to the rolls of the unemployed. Rather it is that if services had been growing in its more usual fashion, they might have absorbed (albeit at low wage levels) up to 65 percent or 27,000 of that year's unemployed. Hence while service growth is not as sensitive to the national economy as other sectors, Massachusetts has become so dependent upon its growth that an off-year once can have lasting effects upon the number of unemployed.

The consequences of this relationship are obvious to the serious national recession in which we now find ourselves. Services have become the workhorse of the state's job generation but they are also the mainstay of the number of jobs we have. In short, our dependency on services extends from the number of jobs to our rate of job growth or decline.

4. Seasonality

One of the more important criteria of job quality is the extent to which employment in an industry is seasonal. Jobs that exist during only part of the year cannot make much of a primary contribution to income. They can make a supplementary contribution but they are limited to this kind of a role.

Unfortunately there were no measures of seasonality kept for industries at the level of detail at which Harbridge House was working. Too, we did not have similar detailed data for the other sectors of the economy for this was beyond the scope of our effort. The measure that we developed subtracted the lowest recorded monthly employment in an industry from the highest monthly employment figure. Then this difference was taken as a percentage of the average employment figure for the year. An example: a firm

has 100 employees on average but its employment fluctuates over the year from 90 to 110 workers. This 20-worker difference taken as a percent of average employment means that the firm has seasonal jobs equivalent to 20 percent of its workforce. One further caveat, because of the way the data were collected there was no way to delete the effect of a firm that closed in mid-year. In effect the outcome is the same as a seasonal lay-off, but it simply cannot be expected to occur regularly in the same proportion.

Service sector employment does not appear to be substantially seasonal. Jobs amounting to about 11 percent of its workforce are seasonal whether one examines all service activities (Table III-12) or the ten largest service activities (Table III-13). Since services account for about 62 percent of total state covered employment, it could be said that about 6.5 percent of all jobs are seasonal and attributable to service activities.

When we examine the locational implications of seasonality it will be interesting to see whether or not services have moderate seasonality because of the large and possibly more stable Boston-area services.

However, irrespective of what the locational analysis shows, it should be recalled that our method for measuring seasonality only records the net employment impact in any given month's employment for that activity. Consequently if several firms laid workers off while others hired an equal amount, employment would show no seasonality, no turnover! Just to get some idea of the extent to which this could actually be occurring we went to our file of 180 three-digit (very detailed) activities. From these we selected all those activities in which employment at its lowest point was 80 percent or less than employment at its highest point.

TABLE III-12
SEASONAL EMPLOYMENT IN SERVICES, 1973
MASSACHUSETTS

	Number of Seasonal Jobs in 1973[a]	Percent of Sector's Employment which is Seasonal
Transportation	9,367	8
Trade	64,467	12
Fire	8,619	7
Selected Services	54,353	12
Total Services	136,806	11%

a
The number of seasonal jobs was defined as the difference between the highest monthly employment and the lowest monthly employment in 1973 for each two-digit SIC in the major sectors. This sum was divided by average yearly employment in each sector to obtain the percentage of seasonal employment.

Source: Harbridge House Inc., based on calculations from Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law, State Summary 1973, Massachusetts Division of Employment Security.

TABLE III-13

SEASONAL EMPLOYMENT IN THE TEN LARGEST SERVICE ACTIVITIES, 1973 MASSACHUSETTS

SIC	INDUSTRY	NUMBER OF SEASONAL JOBS WITHIN INDUSTRY	PERCENT OF INDUSTRY'S TOTAL AVERAGE EMPLOYMENT WHICH IS SEASONAL
581	Eating and drinking places	17,384	17
806	Hospitals	1,620	2
541	Grocery Stores	3,800	7
531	Department stores	15,936	30
822	Colleges and universities	14,639	28
739	Misc. business services	6,480	13
809	Health & allied services	2,706	6
509	Miscellaneous wholesalers	2,277	6
481	Telephone communications	964	3
602	Commercial and stock savings banks	1,135	4
	Total	66,941	12%

Source: Harbridge House Inc., based on calculations from Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law, State Summary 1973. Massachusetts Division of Employment Security.

There were 48 such service activities and they account for about 9 percent of total state covered employment on average. Table III-14 shows that the major hiring and firing occurs in winter and summer. For example some firms (probably retail stores) are at their lowest point in January, and they will hire over 17,000 workers later in the year, probably in November and December. All told, these seasonal services will have turnover amounting to 29 percent of their average yearly employment. In other words, relatively small groups of services amounting to 9 percent of all workers has substantial seasonal employment. Statewide, however, services as a whole are not too seasonal.

5. Size of Firm

The size of firm is a valuable consideration from three perspectives. First, it gives some notion of the extent of competition and ease or difficulty of establishing an enterprise for a prospective entrepreneur. Second, it is a partial indication to a prospective employee as to how stable and financially viable a firm may be. Smaller firms are generally less viable than larger firms, especially in recessionary periods. Third, it may give the state some insight into the size of establishment they would be dealing with should any policies be aimed at certain activities.

Not surprisingly, the size of firms in services was so variable that the "average" figures should be interpreted cautiously. An average firm size of 50 workers does not mean that all or most firms had 50 workers. It could mean that some firms had one employee and others had 99.

Services like other sectors (except manufacturing) had fairly small firm sizes. However, Construction, Transportation, Finance and Selected Services were especially small, suggesting numerous one-, two-, and three-person firms. (See Table III-15)

TABLE III-14
DISTRIBUTION OF SEASONAL SERVICE INDUSTRIES BY HIGH AND LOW PEAKS IN EMPLOYMENT, MASSACHUSETTS 1973

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Aug	Nov	Dec	Yearly Total
Seasonal services will later hire	17,091	6,013	1,327	468	1,098	24	15,952	11,290	8	0	1	400	53,672
Seasonal services will later fire	1,061	8	20	1,624	0	1,186	9,505	5,183	682	2,425	15,583	16,395	53,672

Total percent in Seasonal services will later hire is 29%; in will later fire, 29%.
All 48 three-digit service industries in which lowest monthly level of employment was less than 80 percent of highest monthly level of employment.

Note: We examined 1972 activity instead of 1973 because we felt it might be more likely to display typical seasonality.

Source: Harbridge House, Inc., calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law." State Summary 1972, Massachusetts Division of Employment Security.

TABLE III-15
AVERAGE EMPLOYMENT PER FIRM
BY SECTOR, MASSACHUSETTS 1973

Sector	Average Workers Per Firm
Construction	8
Manufacturing	63
Transportation	27
Trade	13
Finance	15
Selected Services	14

Source: Harbridge House Inc., based upon Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law, State Summary 1973, Division of Employment Security.

When the 182 detailed service industries are examined, Table III-16 shows that the firms have tended to become larger over time. In fact the ratio of the proportion of state covered workers in firms growing larger --as opposed to firms growing smaller--is about 5 to 1 in industries of all wages. The one exception to this is in the moderately high-wage category, where about 15 percent of covered employment is in larger growing firms and only about 2 percent in smaller growing firms. Finally, for the state's ten largest service activities (Table III-17), all are growing larger except for department stores (because of the growing number of small boutiques and shops) and commercial and stock savings banks (likely because of the growth of cooperative banks.)

TABLE III-16

SERVICE INDUSTRIES BY TREND IN FIRM SIZE AND BY WAGE, MASSACHUSETTS, 1973

Wage Group	Service Industries with Increasing numbers of employees per firm 1960-1973		Service Industries with Decreasing numbers of employees per firm 1960-1973		All Service Industries
	Number of 3-digit service activities	% of Total State Covered Employment	Number of 3-digit service activities	% of Total State Covered Employment	% of Total State-Covered Employment
Significantly high ($11,200+)	13	5.31%	16	1.55%	6.86%
Moderately high ($8500-$11,200)	38	15.26	8	1.84	17.10
Moderately low ($5,844-$8,500)	38	10.66	15	2.78	13.44
Significantly low ($5,844 -)	36	20.03	18	4.57	24.60
TOTALS	125	51.26%	57	10.74%	62.00%

Source: Harbridge House Inc., calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law", State Summary, 1973. Massachusetts Division of Employment Security.

TABLE III-17
ESTABLISHMENT SIZE OF TEN LARGEST SERVICE ACTIVITIES, MASSACHUSETTS
1960-1973

		Percentage of State Covered Employment	Average Annual Comp. 1973	Average Number of Employees per Establishment 1973	Trend in Establishment Size
581	Eating and drinking places	5.25	3,450	118	larger
806	Hospitals	4.68	7,550	594	larger
541	Retail grocery stores	2.91	5,550	23	larger
531	department stores	2.73	5,050	150	smaller
822	Colleges and universities	2.66	8,900	612	larger
739	Misc. business services	2.48	8,950	18	larger
809	Health and allied services	2.18	4,550	29	larger
509	Misc. wholesalers	1.98	10,350	12	larger
481	Telephone communication	1.86	10,950	1,457	larger
602	Commercial and stock savings banks	1.57	8,200	73	smaller
		28.3			

Source: Harbridge House Inc., calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Unemployment Security Laws" State Summary, 1973, Massachusetts Division of Employment Security.

6. Blue/White-Collar Orientation

We frequently hear the notion that the unemployed are blue-collar workers who cannot be trained for services--as if services were composed only of doctors and lawyers. This is simply not true. There are blue-collar opportunities, but the high-wage ones, which could be targets for vocational education programs, are few. We have no recent occupational data by sector for Massachusetts, but such data exist for the nation as a whole. To the extent that it is applicable to Massachusetts, and we imagine it is, services are over 40 percent blue-collar (Table III-17). Using what we have already learned about wages, we would guess that the transportation blue-collar jobs are high-wage and include craftsmen, foremen and operatives. But this sector only provides 6 percent of Massachusetts employment and has not grown over the past 13 years to increase its share of total employment.

Blue-collar workers in Finance may well be janitorial workers, but these blue-collar occupations comprise less than 10 percent of occupations in this sector. However, in Trade and in Services, about 40 percent are blue-collar. Wholesale trade blue-collar probably increases the average blue-collar wage for the trade sector, but it is quite possible that most of the blue-collar employment in services is menial and low-wage.

In short, the blue-collar opportunities that are high-wage are found in small sectors like transportation and wholesale trade. The low-wage blue-collar opportunities are more likely to be found in the large sectors of retail trade and selected services with some contribution from finance, insurance and real estate.

7. Export Orientation

Because of the recent attention given to the "export" aspects of our service activities we tried to compile some summary statistics.[1] The

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[1] Bennett Harrison, op. cit, pp. . In this section Harrison cites work by Karen Polenski, who, using data for 1963, estimates state exports. Based upon the data shown in the Harrison report, service exports were about 1.5% of total exports in 1963.

TABLE III-18
DISTRIBUTION OF WHITE-COLLAR AND BLUE-COLLAR WORK IN MAJOR ECONOMIC SECTORS, UNITED STATES, 1970[a]

	Transportation	Trade	Finance	Selected Services
Blue-Collar[b]	58.76	37.69	9.13	41.77
White-Collar[c]	41.24	62.30	90.87	58.23

a
Since this type of percentage breakdown is not available on a statewide level, we have resorted to a national level. The trend on a nationwide basis should be somewhat similar to that statewide.

b
Blue-collar work includes: craftsman, foreman, and kindred workers, operatives and kindred workers, service workers, and laborers.

c
White-collar work includes: professional, technical, and kindred workers; managers, officials, and proprietors; clerical and kindred workers; and sales workers.

Source: Harbridge House Inc., based on calculations from Tomorrow's Manpower Needs, Volume IV, Revised 1971. Bulletin 1737.

general argument suggests that many services attract out-of-state dollars into Massachusetts, thereby creating new jobs, investment and income. This argument is certainly true, but an interesting question arises as how much of our employment is devoted to service exports. In the absence of an exhaustive survey the definitive answer will remain unknown. After all, how many fried clams have to be purchased by out-of-staters in Provincetown to employ a counter girl for the summer? How many people from Hartford purchase insurance in Springfield and how many of these sales transactions are necessary to directly support one Springfield insurance salesman?[1]

However, the bedrock of the service export argument is the region- and nation-serving activity headquartered in Boston.[2] Table III-19 shows several major industries usually identified as export. If we assume for the sake of argument that these industries serve only out-of-state people, that every hospital, college, every insurance company and bank in the Boston Major Labor Market (including the Boston suburbs) received only out-of-state sales, we are still only speaking of 9 percent of the state's employment! This is sizeable - especially when we add so-called indirect jobs - but it is a definite minority of service jobs and state jobs as a whole. Of course Table III-19 does not prove anything conclusively about the size of service exports. It is admittedly unrealistic. Certainly, out-of-state sales and employment occur in other areas of the state beside the Boston area. However, the implications of Table III-19 at least suggest that employment in service exports may be relatively modest in size.

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[1] Note we are speaking of direct employment impacts. Export base theory frequently deals in "multipliers" that create jobs indirectly. A conservative such multiplier would be about 1.5. This means that one job created by export sales would create an additional one and one half jobs elsewhere. It's this "elsewhere" that has always been troublesome. In the case of the fried clams, where were they shucked and packed - Ipswich, Massachusetts or Maine? How about the tin can they came in, where was it made? The trucking company that delivered the goods - where? How about the flour, eggs, etc.? Are out-of-state fried clam sales in Provincetown creating jobs in Maine and Pittsburgh, as well as Massachusetts? Probably.

[2] Harrison, op. cit., p. . Also Alexander Ganz and Peter Menconeri, "The Expanding City of Boston Economy," Boston Redevelopment Authority Research Department, Working Paper EC-1, July 1970, p. 20. It should be noted however that both of the above sources admit that a good deal of Boston's services are exported to the rest of the state in addition to being exported out of state.

TABLE III-19
MAJOR EXPORT-ORIENTED SERVICE ACTIVITIES,
MASSACHUSETTS, 1973

Industry		Percentage of Total State Covered Employment in Boston Major Labor Market Area
806	Hospitals	2.85%
822	Colleges and Universities	2.20
809	Health and Allied Services	1.15
63	Insurance Carriers	1.67
602	Commercial and Stock Savings Banks	1.04
	Total	8.91%

Source: Harbridge House Inc. Calculations based on "Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law," State Summaries 1960 and 1973. Massachusetts Division of Employment Security.

C. Location

Our examination of the locational aspects of service sector employment has been organized in the following manner. First, an overview of service activity in the various major labor market areas (MLMA) will be presented which analyzes the shifting employment patterns of the MLMA's and where service growth has occurred. This section will briefly summarize wage levels in the various MLMA's and the degree to which the various MLMA's are subject to seasonality. Second, each sub-sector of the service industry will be separately analyzed with respect to its shifting employment patterns among the MLMA's, wage levels and degree to which that sub-sector is subject to seasonality. The third section will beirfly analyze the status of each MLMA's service sector.

Granted, such an approach will lead to an analysis of some information from three different perspectives. However, due to the immense volume and complexity of the data, such an approach will guarantee that most of the points are brought out which are crucial to a complete analysis of the locational implications of the state's growth in service activity.

1. Overview

In 1973, 86 percent of the state's total service sector employment was located within the eight metropolitan areas highlighted in this report. As noted earlier, the bulk of this employment, approximately 62 percent (Table III-20) of the state total, is concentrated within the Boston major labor market area. The share of state service sector employment located in the remaining seven labor market areas ranged from a high of 8 percent in Springfield to a low of 2 percent in New Bedford, Lowell, Brockton and Fall River.

Since 1960 share of service employment has shifted slightly away from metropolitan Boston to the more rural areas of Massachusetts. (see Table III-21) The reduction in Boston's share of total state service employment did not result in any of the other seven MLMA's increasing their shares. They had the same share of total services employment in 1973 as in 1960.

TABLE III-20

PERCENT DISTRIBUTION OF STATE'S SERVICE SECTOR
WITHIN THE EIGHT MAJOR LABOR MARKET AREAS 1973

	Boston	Springfield	Worcester	Lawr.-Havrhll	New Bedf.	Lowell	Brockton	Fall River
Transportation, communication and public utilities	63	8	7	2	2	1	4	2
Wholesale and retail trade	57	8	5	3	2	2	3	2
Finance, insurance, real estate	69	8	6	2	1	1	1	2
Selected Service	65	7	5	3	2	2	2	1
Area % of Total State Service Employment	62	8	5	3	2	2	2	2
Area % of State's Total Employment	55	8	6	4	3	3	2	2

Source: Harbridge House Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

TABLE III-21

PERCENT DISTRIBUTION OF STATE'S SERVICE SECTOR
WITHIN THE EIGHT MAJOR LABOR MARKET AREAS 1960

	Boston	Springfield	Worcester	Lawrence-Haverhill	New Bedford	Lowell	Brockton	Fall River
Transportation	67	8	5	2	2	2	3	2
Wholesale/Retail Trade	62	8	5	3	2	2	2	2
Finance	73	8	5	2	1	1	1	1
Selected Services	66	8	4	3	2	1	2	2
Area & of Total State Service Employment	65	8	5	3	2	2	2	2

Source: Harbridge House, Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1960, Division of Employment Security.

There are several plausible reasons which may explain the decrease in Boston's share of total state service employment during the 1960-1973 time period. First, the rural areas and smaller urban areas not included within the boundaries of the eight major labor market areas, have grown in population since 1960 and presumably at a higher rate than the major labor market areas. The resulting increase in demand for services could have allowed these areas to increase their share of state service sector employment. Second, technological advances in transportation and communication could have permitted some of the more regional oriented service industries to move from the central city in search of a suburban or rural location. Third, it may be that the Boston MLMA has since 1960, outgrown its actual boundaries even though its statutory boundaries have not changed.

The Boston labor market area's reduction in its relative share of total service employment is also explained in its own employment growth rates (see Table III-22). Boston, far and away the largest provider of service employment, had a service sector growth rate of 38 percent and ranked sixth, with respect to growth rates among the eight labor market areas. Obviously, such a growth rate did not permit Boston to increase or maintain its share of state service sector employment. However, such a low growth rate does not necessarily imply that Boston's service sector is "in trouble". A more likely explanation of the relatively low growth rate is that Boston is already such a large service sector that even large numerical additions represent small percentage changes.

Due to its more regional orientation, the Boston area experienced a higher level of service employment earlier than the other labor market areas. In 1960, 64 percent of Boston area jobs were already concentrated in services, while the seven other labor market areas had a service sector which only supplied between 34-51 percent of those area's jobs (see Table III-23). By 1973, Boston area services comprised 71 percent of area jobs. Meanwhile, the service activity in the other labor market areas grew at a significantly higher rate, on the average, than the Boston area and by 1973, services represented between 43-62 percent of those area's jobs (see Table III-24).

TABLE III-22

PERCENT EMPLOYMENT GROWTH OF THE SERVICE SUB-SECTORS IN THE MAJOR LABOR MARKET AREAS OF MASSACHUSETTS, 1960-1973

Sector	Boston	Springfield	Worcester	Lawrence Haverhill	New Bedford	Lowell	Brockton	Fall River
Transportation, communication and public utilities	12%	1%	59%	41%	41%	15%	68%	25%
Wholesale & Retail trade	24%	19%	35%	24%	39%	37%	46%	24%
Finance, Insurance and Real Estate	29%	19%	38%	32%	[a]	25%	1%	[a]
Selected Services	67%	42%	67%	71%	52%	93%	142%	48%
All-Service	38%	25%	48%	40%	44%	49%	71%	33%
Total Non-Agricultural Employment	20%	11%	16%	12%	14%	23%	38%	5%

[a] Due to data collection methods, Finance sector statistics for these areas are included in the Selected Services sector.

Source: Harbridge House, Inc., based on calculations from Employment and Earnings States and Areas 1939-72, Bulletin 1370-10 Employment and Earnings, May 1974, Vol. 20, No. 11, U. S. Department of Labor, Bureau of Labor Statistics.

TABLE III-23
DISTRIBUTION OF SERVICE SECTOR AS PERCENT OF TOTAL EMPLOYMENT IN MAJOR LABOR MARKET AREAS 1960

	Boston	Springfield	Worcester	Law. Hav.	New Bed.	Lowell	Brockton	Fall River	1960 State
Transportation	8	5	5	3	4	4	9	6	6
Trade	29	24	22	17	19	23	28	17	24
Fire	9	6	6	3	2	3	3	3	6
Selected Services[a]	18	13	11	11	11	9	11	9	15
All-Service sectors	64	48	44	34	36	39	51	35	51

a
Due to major changes in SIC coverage in 1972 of Selected Services Sector, we have adjusted the 1960 data on Selected Services in order to make it compatible with 1973 data. This was arrived at by using percent share distribution available in Employment and Earnings, 1960 and therefore, may be a percentage point incorrect either way.

Source: Harbridge House Inc., based on unpublished Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law by SMSA and then by Industry, 1960, Massachusetts Division of Employment Security.

TABLE III-24

DISTRIBUTION OF SERVICE SECTOR AS PERCENT OF TOTAL EMPLOYMENT IN MAJOR LABOR MARKET AREAS, 1973

	Boston	Springfield	Worcester	Law-Hav.	New Bed.	Lowell	Brockton	Fall River
Transportation, communication, and utilities	7	5	7	3	4	3	9	6
Wholesale and retail trade	28	26	25	20	24	25	32	21
Finance, real estate and insurance	9	6	7	4	3	4	4	5
Selected services	27	19	19	16	14	17	17	14
Total All Services	71	56	58	43	45	49	62	46

Source: Harbridge House Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

In summary it can be said that the shifting patterns of service sector growth during 1960-1973 has resulted in a slight shift away from Boston. The share loss of Boston service activities was not absorbed by the seven other MLMA's but by the rural and smaller urban areas of the state. Boston's service activities are just slightly more mature and experienced growth earlier. Therefore, service growth was higher in the other MLMA's than in Boston during 1960 to 1973.

If service employment as a whole has shifted slightly away from Boston and if Boston's service sector growth rate has subsided somewhat compared to other MLMA's in recent years, how has the composition of activities changed within services as a whole? These changes can be seen by examining the net new service jobs created in the 1960 - 1973 time period.

Table III-25 shows that 49 percent of new jobs in the Transportation sector were generated in the Boston area. This figure is below Boston's 1960 share of state service activity and necessarily indicates a slight drop in its 1973 share. MLMA's which garnered a relatively large share of new transportation jobs were Worcester, 15 percent; and Brockton 10 percent. The rest of the state outside the eight major labor market areas were only responsible for 7 percent of new Transportation jobs.

Within the Wholesale-Retail Trade sector, Boston was responsible for only 43 percent of new jobs. This is the sector that Boston had the lowest percent of new jobs and this fact supports the statement made earlier in the report that wholesale and retail trade activity is becoming more and more decentralized. Also in support of this statement is the fact that areas outside the eight MLMA's were responsible for 37 percent of new jobs in this sector. For these rural areas, retail and wholesale trade activities were relatively the fastest growing service sectors and were primarily responsible for rural areas increasing their share of state service employment.

Sixty percent of new jobs in the Finance sector were generated in the Boston area. This figure is only slightly below Boston's 1960 share of state service activity and therefore indicates that Boston's share did not decrease significantly over

TABLE III-25

SERVICE JOBS CREATED BETWEEN 1960 AND 1973 IN MAJOR LABOR MARKET AREAS BY SERVICE SUB-SECTOR

	Boston	Springfield	Worcester	Lawrence Haverhill	New Bedford	Lowell	Brockton	Fall River	Rest of State	Total	Statewide Absolute Change Total Employment (in thousands)
Total Non-agricultural employment	50%	4%	4%	2%	2%	2%	3%	1%	32%	100%	432.6
All-Service	57%	5%	6%	2%	2%	2%	3%	1%	22%	100%	386.6
Transportation, communication & public utilities	49%	1%	15%	5%	5%	2%	10%	2%	7%	100%	16.8
Wholesale and Retail Trade	43%	5%	5%	2%	2%	2%	3%	1%	37%	100%	135.6
Finance, Insurance and Real Estate	60%	5%	6%	2%	[a]	1%	2%	[a]	14%	100%	34.8
Selected Services	66%	5%	5%	2%	1%	2%	2%	1%	16%	100%	199.4

[a] Due to data collection methods, Finance sector statistics for these areas are included in the Selected Services Sector.

Source: Harbridge House, Inc., based on calculations from Employment and Earnings, States and Areas 1939-72, Bulletin 1370-10 Employment and Earnings, May 1974, Vol. 20, No. 11, U. S. Department of Labor, Bureau of Labor Statistics.

the 1960-73 time period. The seven other MLMA's and also the rest of state generated new jobs in the Finance sector which closely approximated their 1960 shares of state service activity and therefore no significant changes in share of 1973 activity occurred.

The pattern of new job generation in Selected Services closely paralleled that of the Finance sector. Sixty-six percent of the new jobs were generated in Boston which closely approximated its 1960 share of employment. New jobs generated in the remaining MLMA's and the rest of the state closely approximated their 1960 shares of state service activity and therefore no significant changes in share of 1973 activity occurred.

In our investigation of the growth of service activities and shifts in subsector job generation, Boston was the dominant MLMA. This pattern also holds in our examination of wage levels which follows.

Wage levels for the service sector in general ($7,570) are notably below those recorded at the state level for all economic activity ($8,400). However, this statement must be qualified somewhat when viewing wage levels within the metropolitan areas (see Table III-26). Average wage levels for service sector employees in Boston is $8,200 annually, which is only slightly below the state average wage levels for all employees, $8,400. Service sector wage levels in the remaining seven metropolitan areas ranged from a high of $7,100 in Worcester to a low of $5,950 in New Bedford. Boston's generally higher wage levels parallel its higher cost of living, which traditionally accompanies urbanized areas. Furthermore, as mentioned earlier, Boston has a larger proportion of the high-wage financial, real estate, and insurance occupations. In addition, the more regional orientation of Boston's service sector demands a higher level of skills from its employees which necessitates a relatively higher pay scale. In fact, the above reasoning may account for Worcester's second place standing among Massachusetts metropolitan areas in wage levels. Worcester is to central Massachusetts, only at a lesser scale, what Boston is to the New England Region, i.e., a central location for financial, insurance, and real estate transactions.

TABLE III-26

WEIGHTED AVERAGE ANNUAL COMPENSATION WAGES IN MASSACHUSETTS MAJOR LABOR MARKET AREAS, 1973

	State Avg.	Boston	Springfield	Worcester	Law-rence Hav.	New Bed	Lowell	Brockton	Fall River
Transportation, communication and utilities	$10,654	$11,000	$9,750	$11,000	$9,400	$9,550	$8,250	$10,200	$10,35
Wholesale and Retail trade	6,619	7,150	5,800	6,350	5,850	5,350	5,950	6,000	5,65
Finance, insurance and real estate	9,079	9,650	8,100	8,150	7,350	7,400	7,950	8,000	6,90
Selected services	7,426	8,150	6,350	6,250	6,400	5,600	6,200	6,400	5,50
Weighted average wage for all service sector employment	7,570	8,200	6,600	7,100	6,400	5,950	6,350	6,850	6,35
Average Wage for Total Employment in Major Labor Market Area	$8,394	$9,000	$7,800	$8,200	$8,100	$6,900	$7,700	$7,450	$6,5

Note: $$\text{Average Annual Wage} = \frac{\text{Total Payroll}}{\text{No. of Employees}}$$

Source: Harbridge House, Inc., based on calculations from Employment and Wages by SMSA and then by Industry, 1973. Division of Employment Security.

The proportion of service sector activity subject to seasonality varied notably over the eight metropolitan areas (see Table III-27). New Bedford, with 26.6 percent of its service sector employment in industries subject to seasonal variations, had the highest rate.[1] One possible explanation is that of the eight areas, New Bedford had the highest ratio of Wholesale and Retail Trade as a percent of total service employment (see Table III-27). Wholesale and Retail Trade is the service industry most subject to seasonal variation other than Selected Services, which includes hotels, amusements and recreations. New Bedford's summertime tourist activity may also partially explain its high proportion of seasonal industries.

The area with the lowest percentage of service employment subject to seasonal variation is Boston, with 13.2 percent. As opposed to New Bedford, Wholesale and Retail Trade in Boston comprised the lowest percent of total service activity of the eight major areas reviewed. Moreover, in Boston, unlike other areas, the hotel, restaurant and entertainment activities are year-round and, therefore, not subject to appreciable seasonality.

2. Service Sub-Sectors

The purpose of this section will be to briefly review the separate sub-sectors of the service industry. The degree of seasonality and employment growth, compared to total state growth will be analyzed. In addition, the employment growth and wage levels within the eight labor market areas will also be described for each sub-sector.

a. Transportation, Communications and Utilities

In 1960 employment in this sector accounted for 6 percent of

1
An industry was determined as seasonal if the difference between the highest and lowest monthly employment level was equal to or greater than 20 percent in one year. If this trend occurred for at least four different years (from 1960 - 73) then the industry was termed seasonal.

TABLE III-27
SEASONALITY OF SERVICE SECTOR EMPLOYMENT IN MAJOR LABOR MARKET AREAS AND TRADE AS PERCENT OF SERVICE SECTOR

	Boston	Springfield	Worcester	Law-Hav.	New Bedford	Lowell	Brockton	Fall River
% of total service sector employment in industries subject to seasonality	13.2	21.4	17.9	18.8	26.6	14.7	16.3	14.2
% share that wholesale and retail trade is of major labor market area's service employment	39.4	46.4	43.1	46.5	53.3	51.0	51.6	45.7

Note: An industry was determined as seasonal if the difference between the highest and lowest monthly employment level was equal to or greater than 20 percent in one year. If this trend occurred for at least four different years (from 1960 - 1973) then the industry was termed seasonal.

Source: Harbridge House Inc., based on unpublished Employment and Wages in Establishments subject to the Massachusetts Employment Security Law, by SMSA and then by Industry, 1973. Division of Employment Security.

total state covered employment or 94,000 jobs. By 1973, with 117,500 jobs, employment in this sector still comprised only 6 percent of total state covered employment. Thus, while total employment at the state level increased 23 percent from 1960-1973, employment in this sector grew at only a slightly higher rate of 25 percent -- significantly below the 46 percent growth rate recorded for the entire service industry. The rate of growth in this sector, although greater than the state rate for total employment, was not significant enough for the Transport sector to increase its share of total employment.

SUMMARY CHARACTERISTICS OF TRANSPORTATION SUB-SECTOR

	State	Boston	Springfield	Worcester	Lawrence Haverhill	New Bedford	Lowell	Brockton	Fall River
1973 Employment	117,584	73,650	8,866	7,826	1,933	2,274	1,719	4,569	2,831
Distribution of 1973 Employment	100%	63%	8%	7%	2%	2%	1%	4%	2%
1960 Employment	94,191								
Distribution of 1960 Employment	100%	67%	8%	5%	2%	2%	2%	3%	2%
Distribution of State growth 1960-1973	100%	49%	1%	15%	5%	5%	2%	10%	2%
Average Wage 1973	$10,654	$11,000	$9,750	$11,000	$9,400	$9,550	$8,250	$10,200	$10,350

In 1973, jobs in this sector, as will be the case in all the various sub-sectors, were concentrated in the Boston area. Boston, with 63 percent share of employment in the Transport sector, far outstripped the next closest area, Springfield, with only an 8 percent share of employment. Lowell, with a 1 percent share, had the smallest proportion of Transportation jobs. Another important aspect of the Transport sector is its insensitivity to seasonal variations. In our investigations, no industries within this general category were found to be subject to significant seasonal variances for any sustained period of time.

Average wage levels in the Transportation, Communication and Utilities service sector were found to be quite high. Average compensation was $10,650 annually, noteably different from the $7,550 paid by services in general and even significantly above the average wage level for all Massachusetts employees of $8,400.

In addition, Transportation wages did not differ greatly among the eight metropolitan areas. One possible reason which explains both the relatively high wage level of this sector and the low degree of wage variance among the areas is the high degree of regional unionism associated with the Transportation, Communication and Utilities sector. It is also important to note that the transport unions are not confined to local areas but are more regional, even national, in nature. Unionism may help explain, then, why the Transportation wages appear high and undifferentiated within the state.

However, there was one area--Lowell--that did have noticeable wage deviation. This area's average Transport wage was only $8,250. This is explained in part by the fact that Lowell not only has a small Transport sector--approximately 3 percent of total employment--but more importantly, the bulk of that employment is concentrated in the lower wage transport sector jobs such as local and interurban passenger transit and trucking and warehousing.

b. Wholesale and Retail Trade

In 1960 employment in this sector accounted for 24 percent of total state covered employment or 386,500 jobs. By 1973, with 523,500 jobs, employment in this sector comprise 27 percent of total state covered employment. Thus, while total employment at the state level increased 23 percent from 1960-1973, employment in this sector grew at the higher rate of 35 percent, but below the 46 percent growth rate recorded for the entire service industry. The rate of growth in this sector, which was moderately higher than the state rate for total employment, allowed this sector's share of total employment to increase in the 1960-1973 time period from 24 to 27 percent and allowed this sector to maintain its role as the largest provider of service sector employment.

SUMMARY CHARACTERISTICS OF TRADE SUB-SECTOR

	State	Boston	Springfield	Worcester	Lawrence Haverhill	New Bedford	Lowell	Brockton	Fall River
1973 Employment	523,332	300,115	43,308	28,082	14,052	12,737	12,616	15,486	9,370
Distribution of 1973 Employment	100%	57%	8%	5%	3%	2%	2%	3%	2%
1960 Employment	386,573								
Distribution of 1960 Employment	100%	62%	8%	5%	3%	2%	2%	2%	2%
Distribution State Growth 1960-1973	100%	43%	5%	5%	2%	2%	2%	3%	1%
Average Wage 1973	$6,660	$7,150	$5,800	$6,350	$5,850	$5,350	$5,950	$6,000	$5,650

In 1973, jobs in this sector were concentrated in the Boston area. It is interesting to note, however, that Trade was the only service sector in which percent of jobs located in the Boston area fell below Boston's average for percent share of total service sector employment. One possible explanation is that the Trade sector is less influenced by Boston's role in the New England region and that the level of employment in Trade is primarily dependent on the area's indigenous population. This idea is at least supported by the fact that Boston, with 57 percent of state Trade sector jobs also has approximately 58 percent of the state's population. Share of state Trade sector employment in the remaining areas varied from a high of 8 percent in Springfield to a low of 2 percent in Fall River, Lowell and New Bedford.

A major negative aspect of the Trade sector is its greater sensitivity to seasonal variations. As mentioned previously, the importance of Trade sector activities within an area's economy was found to be directly proportional to that area's sensitivity to seasonal variations. It is also important to mention that within the Trade sector, retail, not wholesale, trade is most subject to seasonality. Wholesale trade employment can be generally categorized as stable, high-wage, and predominantly male.

The average wage level in this sector was foundto be quite low. In fact, this sector, which is the largest service sector in Massachusetts, had the lowest wage level of all the services. Covered compensation was $6,600 annually and, as was expected, below the $7,550 paid by services in general. The highest wages were available in Boston, $7,750 on the average, with the remaining areas generally falling in the $5,600-$6,300 range. The low wages of the sector are partly attributable to its low degree of unionism, low skills requirement, part-time nature and seasonality.

c. Finance, Insurance and Real Estate

In 1960 employment in this sector accounted for 6 percent of total state covered employment or 98,000 jobs. By 1973, with 131,000 jobs, employment in this sector comprised 7 percent of total state covered employment.

Thus, while total employment at the state level increased 23 percent from 1960-1973, employment in this sector grew at the higher rate of 33 percent, but below the 46 percent growth rate recorded for the entire service industry. The rate of growth in this sector, which was modestly higher than the state rate for total employment, allowed this sector's share of the total employment to increase in the 1960-1973 time period from 6 to 7 percent.

In 1973, jobs in this sector were concentrated in the Boston area. It is also interesting to note that Finance was the service sector in which the highest percent of jobs were located in the Boston area. This can be construed as an obvious reflection of the major role Boston plays in the financial sector of the New England economy. Share of state Finance sector employment in the remaining areas varied from a high of 8 percent in Springfield to a low of 1 percent in New Bedford, Lowell and Brockton.

A major positive aspect of the Finance sector is its relative insensitivity to seasonal variations. Although several industries within this sector are subject to seasonality, they represent less than 15 percent of total sector employment. The bulk of Finance sector employment is concentrated in banking, insurance companies and insurance brokers, which are relatively stable industries.

The average wage level in the Finance sector was found to be moderately high. Covered compensation was $9,100 annually, notably different from the $7,550 paid by services in general, and also above the average wage levels for all Massachusetts employees of $8,400. In addition, with the notable exception of Boston, Finance sector wages did not differ greatly among

the metropolitan areas. Average wages were generally found to be within the $7,300-$8,100 range. Boston, with an annual Finance sector wage of $9,650, was significantly higher than this range. Of course, the higher wage levels commonly associated with the Boston area can partially explain this gap. Furthermore, there is the added factor that Boston's Finance sector has a more regional outlook. Perhaps this factor would necessitate that Boston Finance workers have higher skill levels and accordingly relatively higher wages.

d. Selected Services[1]

In 1960, employment in this sector accounted for 15 percent of total state covered employment or 249,500 jobs. By 1973, with 436,000 jobs, this sector had increased its share of total state covered employment to 22 percent. Thus, while total employment at the state level increased 23 percent from 1960-1973, employment in this sector grew at the higher rate of 75 percent. In addition, Selected Services was the only service sector to exceed the 46 percent growth rate of total services. This high rate of employment growth resulted in an increase of this sector's share of total Massachusetts employment from 15 percent in 1960 to 22 percent in 1973, the largest percentage share increase of all the service sectors.

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[1] As stated previously, Selected Services is not to be interpreted as all-service. It is only a sub-sector of the service industry and is primarily comprised of legal, medical, private educational, recreational and hotel services.

SUMMARY CHARACTERISTICS OF SELECTED SERVICES SUB-SECTOR

	State	Boston	Springfield	Worcester	Lawrence Haverhill	New Bedford	Lowell	Brockton	Fall River
1973 Employment	436,074	283,840	31,406	21,841	11,564	7,315	8,493	8,210	6,287
Distribution 1973 Employment	100%	65%	7%	5%	3%	2%	2%	2%	1%
1960 Employment	249,634								
Distribution 1960 Employment	100%	66%	8%	4%	3%	2%	1%	2%	2%
Distribution State Growth 1960-73	100%	66%	5%	5%	2%	1%	2%	2%	1%
Average Wage 1973	$7,450	$8,150	$6,350	$6,250	$6,400	$5,600	$6,200	$6,400	$5,500

In 1973, 65 percent of the jobs in this sector were concentrated in the Boston area. Sector shares of the remaining areas varied from a high of 7 percent in Springfield and 5 percent in Worcester to a low of 1 percent in Fall River.

A positive aspect of Selected Services activity in the major metropolitan areas is its relative low sensitivity to seasonal variation. Discounting Boston for the moment, several industries in this sector were found to be highly susceptible to seasonality, i.e., hotels, motion pictures, amusements and recreation, educational services, and non-profit membership associations. However, these industries represented a small percentage of total

Selected Service employment. The bulk of employment was located in the more stable industries of the Selected Services sector, i.e., medical and other health services, and personal services.

In Boston, which represents 65 percent of this sector's jobs, only two industries were identified in this sector that were susceptible to seasonality. They were amusement and recreation and educational services, and the number of jobs affected by seasonality in these two industries amounted to less than 5 percent of Boston's Selected Services employment. Seasonality was non-existent in Boston in those industries which displayed such trends in the smaller metropolitan areas.

The average wage level in this sector was found to be moderately low. Coverage compensation was $7,450 annually, similar to the $7,550 paid by services in general, but noticeably below the average wage level for all Massachusetts employees of $8,400. In addition, with the notable exception of Boston, Selected Services wages did not differ greatly among the metropolitan areas. Average wages were generally found to be within the $5,500-$6,300 range. Boston, with an annual average wage in this sector of $8,100, is significantly higher than the range. Perhaps, the lower degree of seasonality in Boston's Selected Service sector may help to explain, in part, this wage difference.

3. Area Summaries

The following section will briefly outline the major characteristics of service activity within the major labor market industries. Besides stating the major aspects of service activity, seasonality, distribution of employment within the various service sub-sectors and average compensation paid by service activities in the labor market area. In addition, a list of the five largest service employers and also of the "best"[1] industries, if any, in the area as determined by Harbridge House criteria.

(a) Boston

A good deal of discussion has already been centered on the Boston service sectors as a result of its major impact on the Massachusetts service sector as a whole. The main purpose of this section will be to briefly summarize the growth of the various sub-sectors of services in recent years, average wage rates, and major service sector employers in the area.

The Boston area represents 62% of total Massachusetts service sector employment. (Boston represents 55 percent of all state employment) Average compensation for service sector employment was $8,200, noticeably above the average compensation of $7,550 paid by total Massachusetts services. Total service sector employment in Boston represented 71 percent of the area's employment as opposed to 64 percent in 1960. Significant increases of the various areas sectors occurred in Selected Services.

1
The qualify as a "best" industry, Harbridge House established four basic criteria for an industry to meet at the two-digit level. They were as follows: (1) it must provide a sizeable portion at least one percent, of the total 1973 employment for the labor market area; (2) its employment growth rate during the recession year of 1970-1971 must be positive -- given the context of state-wide employment drop of 3 percent; (3) its industry mean wage of $8,500 or $600 greater than the 1973 industry mean wage of the labor market area -- whichever was less; and (4) it must have a steady, positive growth curve during the 1960-1973 time period and an overall employment growth rate of around 20 percent during this time period. For a summary chart of the "best" industries for each labor market area see Appendix II.

Distribution of employment within the various service sectors closely paralleled that of the state. Since Boston represents such a large percentage of the state's service employment, this was not unexpected. However, one difference should be mentioned. At the state level 22 percent of total employment is in Selected Services while this sector in Boston has 27 percent. This relatively higher concentration of employment is perhaps attributable to Boston's position in the New England region as commented upon earlier.

Seasonality of the area's service sector was relatively low, primarily because Wholesale and Retail Trade does not have a dominant role in the area's economy. Of the 31 dominant service industries reviewed earlier in this Chapter, leading activities in the Boston area were eating and drinking places, hospitals, colleges and universities, miscellaneous business services and department stores. Boston's "best" service sector industries were Communications, Automotive Dealers and Service Stations, insurance agents and brokers, legal services and educational services.[1]

SUMMARY CHARACTERISTICS OF BOSTON SERVICE SECTOR

	Employ. Distribu. 1960	Employ. Distribu. 1973	No. Jobs 1973	% Growth 1960-1973	Ave. Wage 1973
Transportation	8%	7%	73,650	12%	$11,000
Trade*	29%	28%	300,115	24%	$ 7,150
FIRE	9%	9%	90,806	29%	$ 9,650
Selected Services	18%	27%	283,840	67%	$ 8,150
Total Boston Service Employ.	64%	71%	748,411	38%	$ 8,200
Total Boston Employment	100%	100%	1,066,430	20%	$ 9,000

*FIRE is Finance, Insurance and Real Estate.

Source: Harbridge House, Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

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1 See Footnote 1, Area Summaries, p. 87.

(b) Springfield

Statewide, the Springfield area represented 8 percent of total service sector employment and 8 percent of overall total employment. Average compensation for service sector employment was $6,600, noticeably below the average compensation of $7,550 paid by total Massachusetts services. However, it was similar to average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in Springfield represented 56 percent of areas employment as opposed to 48 percent in 1960. Significant increases within the service sector occurred primarily in Selected Services. Distribution of employment within the various service sectors closely paralleled that of the state, except for Selected Services which was below the level of employment recorded for the state. Perhaps this can be explained in part by the fact that several industries within this sector are regional in nature and concentrated in the Boston area, and that Selected Services within the smaller metropolitan areas need only meet local needs.

SUMMARY CHARACTERISTICS OF SPRINGFIELD SERVICE SECTOR

	Distribu. Employ. 1960	Distribu. Employ. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	5%	5%	8,866	1%	$8,750
Trade	24%	26%	43,308	19%	5,800
FIRE [a]	6%	6%	10,137	19%	8,100
Selected Services	13%	19%	31,406	42%	6,350
Total Springfield Service Employment	48%	56%	93,717	25%	$ 6,600
Total Springfield Employment	100%	100%	165,952	11%	$ 7,800

a FIRE is Finance, Insurance and Real Estate.
Source: Harbridge House Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

Seasonality of the area's service sector was relatively high. Wholesale and Retail Trade have a moderately dominant role in the area's economy. In addition, the area has a relatively large college population, which, during the summer, tends to shrink service activity.

Of the 31 dominant service industries reviewed earlier in this chapter, the leading activities in the Springfield area were eating and drinking places, hospitals, department stores, grocery stores and life insurance. Springfield's "best"[1] service sector industries were Communications, and trucking and warehousing.

(c) Worcester

The Worcester area represented 7 percent of the total service sector employment and 6 percent of overall total employment. Average compensation for service sector employment was $7,100, slightly below the average compensation of $7,550 paid by the total Massachusetts services. However, it was slightly above the average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in Worcester represented 58 percent of the area's employment as opposed to 44 percent in 1960. Significant increases within the service sector occurred in Wholesale and Retail Trade and Selective Services. Distribution of employment within the various service sectors closely paralleled that of the state except for Selected Services which was below the level of employment recorded for the State. Perhaps, as was the case in Springfield, this can be explained in part by the fact that several industries within this sector are regional in nature and concentrated in the Boston area and that Selected Services within the smaller metropolitan areas need only meet local needs.

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1 See Footnote 1, Area Summaries, p. 87.

SUMMARY CHARACTERISTICS OF WORCESTER SERVICE SECTOR

	Distribu. Employ. 1960	Distribu. Employ. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	5%	7%	7,826	59%	$11,000
Trade[a]	22%	25%	28,082	35%	6,350
FIRE	6%	7%	8,136	38%	8,150
Selected Services	11%	19%	21,841	67%	6,250
Total Worcester Service Employment	44%	58%	65,885	48%	$ 7,100
Total Worcester Employment	100%	100%	113,701	16%	$ 8,200

a FIRE is Finance, Insurance and Real Estate.

Source: Harbridge House, Inc. based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

Seasonality of the area's service sector was fairly moderate. Wholesale and Retail Trade does not have a dominant role in the area's economy. While reviewing the list of Massachusetts 31 largest service sector employers, it was found that the major activities in the Worcester area are hospitals, eating and drinking places, grovery stores, health and allied services and life insurance. Worcester's "best"[1] service industries were communications, electric, gas and sanitary services, wholesale trade, and insurance agents and brokers.

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1 See Footnote 1, Area Summaries, p. 87.

(d) Lawrence-Haverhill

Statewide, the Lawrence-Haverhill represented 3 percent of total service sector employment and 4 percent of overall employment. Average compensation for service sector employment was $6,400, noticeably below the average compensation paid by total Massachusetts services of $7,550. However, it was similar to the average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in Lawrence-Haverhill represented 43 percent of the area's employment as opposed to 34 percent in 1960. Significant increases within the service sector occurred in Wholesale and Retail Trade and Selected Services. Distribution of employment within the various service sectors was moderately behind that of the state in all categories. This result is understandable due to the fact that service employment in Lawrence-Haverhill accounts for less than half of the area's total employment while at the state level it accounts for 62 percent. Obviously, this area is more industrially dependent than the state.

SUMMARY CHARACTERISTICS OF LAWRENCE-HAVERHILL SERVICE SECTOR

	Employ. Distribu. 1960	Employ. Distribu. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	3%	3%	1,933	41%	$9,400
Trade	17%	20%	14,052	24%	5,850
FIRE [a]	3%	4%	2,846	32%	7,350
Selected Services	11%	16%	11,564	71%	6,400
Total Lawrence Haverhill Service Employment	34%	43%	30,395	40%	$6,400
Total Lawrence Haverhill Employment	100%	100%	71,536	12%	$8,100

a FIRE is Finance, Insurance and Real Estate.

Source: Harbridge House, Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

Seasonality of the area's service sector was moderately high and Wholesale and Retail Trade played a fairly dominant role in the area's service economy. While reviewing the list of Massachusetts 31 largest service sector employers, it was found that the major service activities in the Lawrence-Haverhill area are eating and drinking places, hospitals, health and allied services, miscellaneous business stores and department stores. The "best" service industries in Lawrence-Haverhill were trucking and warehousing, communications, insurance carriers, and miscellaneous business services.

(e) New Bedford

Statewide, the New Bedford area represented 2 percent of total service sector employment and 3 percent of overall employment. Average compensation for service sector employment was $5,950, noticeably lower than the average compensation of $7,550 paid by total Massachusetts services. It was also lower than the average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in New Bedford represented 45 percent of the area's employment as opposed to 36 percent in 1960. Significant increases within the service sector occurred in Wholesale and Retail Trade. Distribution of employment within the various sectors was moderately behind that of the state in all categories. This result is understandable due to the fact that service employment in New Bedford accounts for less than half of the area's total employment while at the state level, it accounts for 62 percent. Obviously, this area is more industrially oriented than the state.

New Bedford service sector susceptibility to seasonality is relatively high and of all the major metropolitan areas, it has the highest ratio of Wholesale and Retail Trade employment as a percent of total service sector employment.

1
See Footnote 1, Area Summaries, p. 87.

SUMMARY CHARACTERISTICS OF NEW BEDFORD SERVICE SECTOR

	Distribu. Employ. 1960	Distribu. Employ. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	4%	4%	2,274	41%	$9,550
Trade	19%	24%	12,373	39%	5,350
FIRE	2%	3%	1,636	a	7,400
Selected Services	11%	14%	7,315	52%	5,600
Total New Bedford Employment Service	36%	45%	23,598	44%	$5,950
Total New Bedford Employment	100%	100%	52,400	14%n	$6,900

a Due to reporting methods, data for the FIRE sub-sector (Finance, Insurance and Real Estate) combined with selected services.

Source: Harbridge House, Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

Of the 31 dominant industries reviewed earlier in this chapter, leading activities in the New Bedford area were eating and drinking places, grocery stores, hospitals, department stores and health and allied products. There were no "best" industries in New Bedford based on criteria developed by Harbridge House. However, if industries less than one percent are considered then insurance carriers, insurance agents and brokers, and miscellaneous business services are New Bedford's "best" industries.

1
See Footnote 1, Area Summaries, p. 87.

(f) Lowell

Statewide, the Lowell area represented 2 percent of total service sector employment and 3 percent of overall employment. Average compensation for service sector employment was $6,350, noticeably lower than the average compensation of $7,550 paid by total Massachusetts services, but it was similar to the average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in Lowell represented 49 percent of the area's employment as opposed to 39 percent in 1960. Significant increases within the service sector occurred in Selective Services. Distribution of employment within the various sectors was below that of the state in all categories but one, Wholesale and Retail Trade. This result is understandable due to the fact that service employment in Lowell accounts for less than half of the area's total employment while at the state level it accounts for 62 percent. Obviously, this area is more industrially dependent than the state as a whole.

SUMMARY CHARACTERISTICS OF LOWELL SERVICE SECTOR

	Distribu. Employ. 1960	Distribu. Employ. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	4%	3%	1,719	15%	$8,250
Trade	23%	25%	12,616	37%	5,950
FIRE[a]	3%	4%	1,868	25%	7,950
Selected Services	9%	17%	8,493	93%	6,200
Total Lowel Service Employment	39%	49%	24,696	49%	$6,350
Total Lowell Employment	100%	100%	50,746	23%	$7,700

a FIRE is Finance, Insurance and Real Estate.

Source: Harbridge House, Inc., based on unpublished Employment and Wages by SMSA and then by Industry, 1973, Division of Employment Security.

Seasonality of the area's service sector was moderately low. Although Wholesale and Retail Trade was a fairly dominant service activity, an examination of employment distribution within the Trade sector indicated that a large number of jobs were concentrated in Trade industries that showed little susceptibility to seasonal variations.

Of the 31 dominant industries reviewed earlier in this chapter, leading activities in the Lowell area were hospitals, eating and drinking places, grocery stores, department stores and health and allied services. Lowell's "best"[1] service industries were Wholesale Trade and Retail Trade.

(g) Brockton

Statewide, the Brockton area represented 2 percent of total service sector employment and 2 percent of overall employment. Average compensation for service sector employment was $6,850, below the average compensation of $7,550 paid by total Massachusetts services but slightly above the average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in Brockton represented 62 percent of the area's employment as opposed to 47 percent in 1960. Significant increases within the service sector occurred in Wholesale and Retail Trade and Selected Services. Distribution of employment was markedly different than that of the state. Brockton had a higher percentage of employment in the Transportation and Trade sectors and a lower percentage in the Finance and Selected Services sector. The relatively high percent of Transport sector employment accounts for the slightly higher wage levels of the service sector in the area.

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1 See Footnote 1, Area Summaries, p.87.

SUMMARY CHARACTERISTICS OF BROCKTON SERVICE SECTOR

	Distribu. Employ. 1960	Distribu. Employ. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	9%	9%	4,569	68%	$10,200
Trade	28%	32%	15,486n	46%	6,000
FIRE[a]	3%	4%	1,839	1%	8,000
Selected Services	11%	17%	8,210	142%	6,400
Total Brockton Service Employment	51%	62%	30,104	71%	$ 6,850
Total Brockton Employment	100%	100%	48,412	38%	$ 7,450

a FIRE is Finance, Insurance and Real Estate.
Source: Harbridge House, Inc., based on unpublished Employment and Wages in SMSA and then by Industry, 1973, Division of Employment Security.

Seasonality of the area's service sector was moderate. Although Wholesale and Retail Trade was a dominant service activity, the relative high concentration of employment in the stable Transport sector tended to offset the effects of Trade dominance.

Of the 31 dominant industries reviewed earlier in this chapter, leading activities in the Brockton area were eating and drinking places, hospitals, grocery stores, health and allied services and department stores. Brockton's "best"[1] service industries were trucking and warehousing, communications, utilities, wholesale trade, and insurance carriers.

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1 See Footnote 1, Area Summaries, p. 87.

h. Fall River

Statewide, the Fall River area represented 2 percent of total service sector employment and 2 percent of overall employment. Average compensation for service sector employment was $6,350, noticeably below the average compensation of $7,550 paid by total Massachusetts services, but similar to the average wage levels in the metropolitan areas exclusive of Boston. Total service sector employment in Fall River represented 46 percent of the area's employment as opposed to 35 percent in 1960. Significant increases within the service sector occurred in Wholesale and Retail Trade and Selected Services. Distribution of employment within the various sectors was below that of the state in all categories. This result is understandable due to the fact that service employment in Fall River accounts for less than half of the area's total employment. While at the state level, it accounts for 62 percent. Obviously, this area is more industrially oriented than the state as a whole.

Seasonality of the area's service sector was relatively low and the Wholesale and Retail Trade sector did not have a dominant role in the area's service activity. Of the 31 dominant industries reviewed earlier in this chapter, leading activities in the Fall River area were hospitals, eating and drinking places, grocery stores, wholesale trade (machinery, equipment and supplies), and department stores. The "best"[1] service industries in Fall River were trucking and warehousing, communications, and electric and gas and sanitary services.

1
See Footnote 1, Area Summaries, p. 87.

SUMMARY CHARACTERISTICS OF FALL RIVER SERVICE SECTOR

	Distribu. Employ. 1960	Distribu. Employ. 1973	No. Jobs 1973	% Growth 1960-1973	Average Wage 1973
Transportation	6%	6%	2,831	25%	$ 10,350
Trade	17%	21%	9,370	24%	5,650
FIRE	3%	5%	2,170	a	6,900
Selected Services	9%	14%	6,287	48%	5,500
Total Fall River Service Employment	35%	46%	20,658	33%	$ 6,350
Total Fall River Employment	100%	100%	44,071	5%	$ 6,550

a Due to data collection methods, data for the FIRE sub-sector (which is Finance, Insurance and Real Estate) is combined with Selected Services.

Source: Harbridge House, Inc., based on unpublished Employment and Wages in SMSA and then by Industry, 1973, Division of Employment Security.

4. Base Areas

In the discussion which follows the composition of service activities in the various base areas will be reviewed. Potential candidates for recruitment will be identified based on the present composition of area employment, existing wage levels and past growth trends.

In determining those industries which a particular base area should consider recruiting there was no set methodology developed, but was more an "ad hoc" decision dependent upon the status of the service industry within each base area. In general, we tried to identify those industries which had demonstrated relatively high growth rates in the past, were likely to supply jobs to primary heads of households, had relatively high wage scales, and given the context of service activity in a particular base those industries which it had a realistic change of attracting.

(a) Chicopee-Ludlow

The Chicopee-Ludlow area, with only 40 percent of its workforce employed in the service sector in 1973 (see Table III-28) is substantially below the average of other labor market areas in the state and significantly below the average of 51 percent for the state as a whole. However, during the 1960-1970 time period service sector activity increased 432 percent (see Table III-29) with the majority of growth occurring in the trade sub-sector. It appears reasonable to assume that such a growth trend for service activity will continue in the future, but perhaps not at such a high rate and that service activity will continue to dominate more and more of the area's activity.

Nonetheless, for all of its recent service growth, the Chicopee-Ludlow area is, at present, more oriented towards goods producing industries than service industries.

However, when the area is viewed from this production orientation, an important question emerges as to why only one percent of the area's employment is located in the Transportation service sub-sector. Manufacturing and local retailers

TABLE III-28
PERCENTAGE DISTRIBUTION OF BASE AREAS SERVICE EMPLOYMENT
1973

	Boston	Chelsea	Falmouth, Mashpee Bourne, Sandwich	Chicopee-Ludlow	State Average
Transportation	9	4	4	1	6
Trade	24	42	34	26	24
FIRE	16	5	5	2	6
Services	32	9	38	11	15
All Services (As % of Total Area Employer)	81	60	81	40	51

Source: Harbridge House, Inc. based on "Employment and Wages in Establishments Subject to the Mass Employment Security Law." Data for the Cities and Towns, the Commonwealth of Massachusetts, Division of Employment Security, Boston. Massachusetts.

TABLE III-29
RECENT GROWTH RATE OF SERVICE SECTOR JOBS IN THE BASE AREAS COMPARED TO THE STATE AS A WHOLE, 1960-1970

	Boston	Chelsea	Falmouth, Mashpee Bourne, Sandwich	Chicopee-Ludlow
Transportation, Communi-cations, Public Utilities	74%	20%	19%	3%
Wholesale and Retail Trade	(256)	164	283	62
Finance, Insurance and Real Estate	600	24	13	8
Selected Services	600	76	116	35
Total All Services	1,018	284%	432%	109%
Total of Change	100%			

Source: Harbridge House, Inc., based on Employmenet and Wages in Establishments Subject to the Mass Employment Security Law." Data for the Cities and Towns, the Commonwealth of Massachusetts, Division of Employment Security, Boston, Massachusetts.

must necessarily rely upon a variety of transportation services. They are therefore being services in all likelihood by transportation firms located outside the Chicopee-Ludlow area. Here, then, exists a potential opportunity to recruit service activities. Activities in the transportation sector which are heavily depended upon by manufacturing and retail firms are SIC 404 railway express service, SIC 421 trucking, local and long distance, SIC 423 truck terminal facilities, SIC 472 freight forwarding, and SIC 458 air transport services. The needs of SIC 458 would be possible to accommodate if the community chose to retain parts of Westover Air Force Base for air transit. Granted, all of the above-named activities are not extremely labor intensive, they do nonetheless, offer the advantages of being relatively high wage industries with generally low skill requirements for entry level positions. Another important consideration is that attracting these industries to the Chico-ee-Ludlow area would add very few new jobs to the Springfield labor area, of which the Chicopee-Ludlow area is a part. These jobs already exist in the surrounding area because the needs of manufacturers are being met. Attracting these jobs to Chicopee-Ludlow could therefore result in a redistribution of existing jobs in the Springfield area, unless Chicopee and Ludlow sought to satisfy regional demand.

The wholesale-retail trade sector employs 26 percent of the area's work force, which is slightly above the state average of 24 percent and is the only service activity in Chicopee-Ludlow that is at or above the state average. The approximation of the trade sector to the state average is not an unexpected result because as indicated previously, most trade activities here probably have little regional orientation, being primarily dependent instead, upon the area's indigenous population. For this reason, there exist few "desirable" recruitment candidates in this sector. Moreover, wages in this sector, on the average, are especially low. Recruitment candidates which do exist will be covered below in a discussion of the ten largest industries.

The finance sector employs two percent of the Chicopee-Ludlow workforce which is significantly below the state average of 6 percent. It would appear that the bulk of these specialized services are being provided by the nearby Springfield urban center. In general, these industries have a preference for an urban location. This, when combined with the fact that the finance sector has demonstrated the lowest 1960-1970 growth rate (13 percent) of all the Chicopee-Ludlow service sub-sectors, makes it appear unlikely that any such firms can be recruited, which would employ significant numbers of people.

Selected services employs 11 percent of the area's workforce which is slightly below the state average of 15 percent. This sector demonstrated the healthy growth rate of 116 percent during the 1960-1970 time period and will in all probability continue to expand though perhaps not at this pace, in the future. However, due to the seasonality, low wages and low skill requirements which are characteristic of most of the activities in this industry, recruitment of selected service activities which would offer head-of-household type employment appears problematic.[1]

The ten largest service sector employers in the Chicopee-Ludlow area, as listed in Table III-30 account for 25 percent of the area's total employment and grew 109 percent during the 1960-1970 time period. However, these largest employers, when aggregated, had an average annual compensation of only $4,350 which is less than 60 percent of the average wage (about $7,600) prevailing in the area. No doubt this low wage occurs because many of the positions available are part-time or temporary. Hence yearly earnings are low. The top four industries were eating and drinking places, grocery stores, department stores, and hotels and motels, and these four accounted for 17 percent of the area's total

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1
Of course, selected services in this area as in the state in general are likely to have numerous job openings in wages quite suitable to secondary or supplemental wage earners. Hence selected services could be a potential recruitment target for these types of job seekers (see Table III-29).

TABLE III-30
THE JOB CHARACTERISTICS OF THE TEN LARGEST SERVICE INDUSTRIES FOR THE CHICOPEE-LUDLOW AREA

SIC		Percentage of 1973 Total Area Employment	1973 Employment	Employment Growth Rate 1960-1970	Average Annual Compensation 1973
581	Eating and Drinking Places	7%	1,172	140%	$2,894
541	Grocery Stores	5	825	118	4,500
531	Department Stores	3	458	(7)	4,132
701	Hotels, Motels and Tourist Courts	2	311	101	3,956
509	Miscellaneous Wholesalers	2	287	26	7,229
734	Services to Buildings	2	280	1,571	3,720
554	Gasoline Service Stations	1	252	65	3,897
809	Health and Allied Services	1	241	106	4,276
551	New and Used Car Dealers	1	223	150	8,551
	*	1	201	-	6,497
	Aggregated	25%	4,250	109%[1]	$4,369[2]
All Area Industry		100	16,983[3]	N.A.**	$7,577

*Nature of industry may not be published in accordance with disclosure regulations.
**Not Available.

[1] Average growth rate of the top ten industries.

[2] Average compensation per worker for the top ten industries.

[3] Total employment in Chicago and Ladlow from all industries.

Source: Harbridge House, Inc., based on "Employment and Wages in Establishments Subject to the Mass Employment Security Law." Data for the Cities and Towns, the Commonwealth of Massachusetts, Division of Employment Security, Boston, Massachusetts.

employment and were highly seasonal in nature. The only desirable recruitment candidates from a payroll point of view listed among the ten largest services was SIC 509 miscellaneous wholesalers. This industry demonstrated a modest growth rate of 26 percent between 1960-1973. Recruitment of this particular SIC would appear to offer some chance of success due to the present industrial make-up of the area. The only other of the largest service industries, with an attractive wage scale was SIC 551, new and used car dealers. Discounting the fact that the present economy has not placed car dealerships in an expansionary position, it would appear unlikely that car dealerships would expand unless population levels and/or income levels also increased.

(b) Bourne, Falmouth, Mashpee and Sandwich

The Bourne, Falmouth, Mashpee and Sandwich area has a service sector which is highly seasonal in nautre due to the popularity of the area as a summer resort. It has 81 percent of its area employment contained in the service sector. This is the largest percent of service work force thus far reviewed in this report.

In our examination of the Bourne area, no firms were identified as potential recruitment candidates. A vast majority of the service activies in the area were in those industries subject to high seasonaility and offering low wages. Industries which did demonstrate cyclical stability and/or high wages had not been expansionary in the past and there was no reason to expect them to be in the future. Due to the high percentage of jobs (81%) located in the service activities, local policy makers may wish to look at recruiting industries from alternative sectors of the economy. Such recruitment efforts may lead to a reduction in the dominance of the service sector and reduce the seasonal instability currently associated with area jobs and correspondingly may raise area wage rates.

During 1960-70, the service sector of the area grew 109 percent with most of the growth occuring in the Trade sector. In the future, exclusive of dramatic increases in population, it would appear that growth in service sector activity will taper off somewhat. Again, as is the case in the Boston area, this would not indicate that the Bourne area service sector is "in trouble" but would only reflect the approaching of a "saturation point." It would appear unlikely for the service sector of any area to supply more than 85 - 90 percent of an area's jobs in the near future.

The transportation sub-sector employs 4 percent of the areas work force which is only slightly below the state overage of 6 percent. Potential firms for recruitment may well exist in transportation subsector. However, due to the seasonal nature of the firms they would be serving, new transport activity would in itself be seasonal.

The wholesale-retail trade sector employs 34 percent of the area's workforce, which is significantly above the state average of 24 percent. Many of the largest industries in this sub-sector are seasonal in all areas of the state, but even more so in this area due to its popularity as a summer resort. There appears to be no candidates for recruitment in this sector due to its generally low wages and extremely high seasonality.

The Finance sector employs 5 percent of the area's workforce which closely approximates the state average. However, there appears to be an inordinate number of people employed in real estate services. This is perhaps attributable to the relatively recent activity (since 1960) in the sale of land and vacation homes. The long-term stability of this sector is questionable as land becomes scarcer although the type of real estate transactions may shift to those involving higher density developments and thus larger, more specialized real estate firms.

Perhaps the bulk of the specialized financial services needed by the population are being provided by Boston or other nearby urban areas. It is unlikely that any firms from the finance sector, which would employ significant numbers of people, can be recruited to an area which is so seasonal although we are aware of the cape area's strides (noteably Hyannis) in attracting new permanent populations, especially upper income retirees.

The Selected Service sector employs 38 percent of the area's workforce which is substantially above the average for the state of 15 percent. The relatively high degree of employment in this sector is explained by the resort nature of the area. The majority of employment in selected services sector was concentrated in a few industries, such as, hotels and motels, recreational services, and personal services. Any firms recruited in this sector would in all probability, also be seasonal and low wage.

The ten largest service employers in the Bourne area, as listed in Table III-31, account for 52 percent of the area's total employment and grew at the rate of 154 percent between 1960 - 1970. These ten largest employers, when aggregated, had an average annual compensation of $5,800. The top two industries, eating and drinking places, and hotels and motels, accounted for 23 percent of the area's total employment but had average wage levels under

TABLE III-31
THE JOB CHARACTERISTICS OF THE TEN LARGEST SERVICE INDUSTRIES FOR THE BOURNE, FALMOUTH, MASHPEE AND SANDWICH AREA

SIC		Percentage of 1973 Total Area Employment	1973 Employment	Employment Growth Rate 1960-1970	Average Annual Compensation 1973
581	Eating and Drinking Places	12%	1,065	124%	$ 3,185
701	Hotels, Motels, and Tourist Courts	11	904	60	3,899
	*	10	824	724	10,775
541	Grocery Stores	4	353	49	5,496
809	Health and Allied Services	4	308	204	4,332
	*	3	277	0	6,969
602	Commercial and Stock Saving Banks	2	169	84	6,296
446	Water Transportation Services	2	164	19	8,097
554	Gasoline Service Stations	2	158	115	4,313
551	New and Used Car Dealers	2	145	70	9,404
	Aggregated	52%	4,367	154%	$ 5,824
All Area Industry		100	8,559	N.A.**	$ 6,275

*Nature of Industry may not be published in accordance with disclosure regulations.
**Not Available.

Source: Harbridge House, Inc., based on "Employment and Wages in Establishments Subject to the Mass Employment Security Law." Data for the Cities and Towns, the Commonwealth of Massachusetts, Division of Employment Security, Boston, Massachusetts.

$4,000. The third largest industry, which had the highest wage level of the ten industries cannot be identified due to disclosure restrictions.

The only desirable recruitment candidate, from a payroll point of view, listed among the ten industries was SIC 446 water transportation services. It had an annual wage of $8,100 but a 1960-70 growth rate of only 19 percent. Such a ten year growth rate clearly indicates rapid expansion is problematic.

(c) Boston, City of

Service activities in Boston account for 81 percent of the city's jobs. Unlike the Bourne area which also had 81 percent service jobs, Boston's service activities have traditionally demonstrated low seasonality and high growth rates. This statement, however, must be modified somewhat when viewing the various sub-sectors of Boston services.

Retial and wholesale trade which comprised 24 percent of the city's jobs had a negative 1960-70 growth rate of 254 percent. The increasing popularity of suburban shopping malls has drawn shoppers away from the downtown district and the construction of Route 128, Route 495 and the Massachusetts Turnpike have allowed wholesalers to leave the city in search of sites with less congested traffic linkages and less expensive land. However, if decision-makers of the City determined that such a situation was deletorious to the growth of the city, it appears that the South Boston Naval Annex holds some potential to attract wholesale activities. However, it is important to note that the Boston community would perhaps prefer more land intensive uses for the site.

Nonetheless, despite a negative growth rate of 254 percent in the Trade sector, Boston still experienced an overal growth in services from 1960-70 in excess of 1,000 percent!

Transportation which comprised 9 percent of area jobs in 1973 grew 74 percent. The finance sector which accounted for 16 percent of area jobs grew by 600 percent and selected services which accounted for 32 percent of area jobs also increased employment 600 percent between 1960-70.

It would thus appear that Boston would probably not require an extensive recruitment program to maintain healthy growth rates in service activity. However, local decision-makers may wish to consider developing some type of selection criteria for services desiring to operate in the City in order to maximize wage levels, cyclical stability, jobs for residents and future growth trends.

The ten largest service employers in the city of Boston, as listed in Table III-32, account for 73 percent of area jobs but grew at a very modest rate of 14 percent during the 1960-70 time period. These ten largest employers, when aggregated, had a relatively high annual compensation wage of $8,400. Of the ten industries, only three, eating and drinking places, miscellaneous business service, and department stores, had an annual compensation wage less than $8,500.

(d) Chelsea

Service activities in Chelsea accounted for 60 percent of that city's jobs compared to 51 percent at the State level. However, a somewhat unique pattern emerged with respect to distribution of service activity among the various sub-sectors of the service industry. Whereas, most areas, on the average had, relatively minor differences in percent of area jobs in the trade sector versus the selected services sector, Chelsea had 42 percent of its area jobs in trade and only 9 percent in selected services.

The retail and wholesale trade sector is by far the most active service sector in Chelsea. During 1960-70, it expanded by 164% with the majority of growth occuring in the relatively high wage wholesale portion. This type of job growth indicates a healthy service sector with respect to wage levels and cyclical stability.

TABLE III-32
THE JOB CHARACTERISTICS OF THE TEN LARGEST SERVICE INDUSTRIES FOR THE CITY OF BOSTON

SIC		Percentage of 1973 Total Area Employment	1973 Employment	Employment Growth Rate 1960-1970	Average Annual Compensation 1973
806	Hospitals	9%	34,084	36%	$8,890
581	Eating and Drinking Places	4	15,325	1	4,232
631	Life Insurance	4	14,597	21	9,436
739	Miscellaneous Business Services	3	13,666	80	6,736
531	Department Stores	3	12,812	(4)	5,590
602	Commercial and Stock Saving Banks	3	12,603	62	9,636
481	Telephone Communications	3	11,921	21	11,574
822	Colleges and Universities	3	11,592	75	8,519
509	Miscellaneous Wholesalers	3	10,204	(24)	11,388
633	Fire, Marine and Casualty Insurance	2	8,301	6	9,110
	Aggregated	37%	145,105	14%	$8,423
All Area Industry		100%	397,829	N.A.*	$9,259

*Not Available.

Source: Harbridge House, Inc., based on "Employment and Wages in Establishments Subject to the Mass Employment Security Law." Data for the Cities and Towns, the Commonwealth of Massachusetts, Division of Employment Security, Boston, Massachusetts.

Transportation which comprised 4 percent of the area jobs grew 20 percent during 1960-70. The finance sector which accounted for 5 percent of area employment grew 24 percent and selected services which accounted for 32 percent of the area jobs increased employment 76 percent.

The dominance of wholesale trade, undoubtedly attributable to the decision to locate a regional wholesale produce market in Chelsea, is also evident when viewing the ten largest employers in the city (See Table III-33). These industries account for 36 percent of the area's total 1973 employment and expanded collectively at a rate of 30 percent between 1960-70. When aggregated, these service industries had surprisingly high average annual compensation wage in excess of $10,000. The two largest service industries in Chelsea were both wholesalers (miscellaneous wholesalers and wholesale, groceries and related products). These two services accounted for 19 percent of Chelsea's employment and both had wages in excess of $10,000.

The effects of the recent tragic fire on Chelsea's wholesale industries is unknown. However, it would appear safe to assume that the large tracts of vacant land caused by the fire, in addition to the Chelsea Naval Hospital site, would afford city planners the opportunity to substantially alter the past course of its service activities. Substantial investments in upgrading infrastructures could possibly make the area more appealing to white-collar service activities. The major drawbacks in this development choice are that first, given the past history of area jobs, resident would most likely have to be re-trained to be eligible for many of the new job opportunities and second, the time lag between marketing and recruitment would perhaps be a relatively long time span given that readily available office space exists in Boston.

The other major option of service development is to begin immediately recruiting wholesale activities which have, in the past, demonstrated a preference for a Chelsea location. As stated previously wage levels in this sector are relatively high and would not likely require any re-training of the resident labor force.

TABLE III-33
THE JOB CHARACTERISTICS OF THE TEN LARGEST SERVICE INDUSTRIES FOR THE CITY OF CHELSEA

SIC		Percentage of 1973 Total Area Employment	1973 Employment	Employment Growth Rate 1960-1970	Average Annual Compensation 1973
509	Miscellaneous Wholesalers	12%	1,064	4%	$10,670
504	Wholesale Groceries and Related Products	7	599	329	10,520
581	Eating and Drinking Places	4	317	(11)	3,604
541	Grocery Stores	3	216	(7)	5,721
421	Trucking, Local and Long Distance	2	209	64	12,043
598	Fuel and Ice Dealers	2	165	11	13,816
531	Department Stores	2	162	-	5,025
501	Wholesale Trade--Motor Vehicles and Automotive Equipment	2	146	93	7,461
591	Drug Stores and Proprietary Stores	1	116	5	4,403
551	New and Used Car Dealers	1	115	21	10,249
Aggregated		36%	3,109	30%	$ 9,141
All Area Industry		100	8,624		$ 8,034

Source: Harbridge House, Inc., based on "Employment and Wages in Establishments Subject to the Mass Employment Security Law." Data for the Cities and Towns, the Commonwealth of Massachusetts, Division of Employment Security, Boston, Massachusetts.

5. Labor Market Areas Estimated 1980 Employment Levels

Service activity employment in 1980 for the state as a whole has been covered earlier in this chapter. The purpose of this section will be to view the 1980 service employment levels for the various major labor market areas and the share of state service activity those areas will contain in 1980. However, it first must be brought out, as mentioned in the earlier section, that our extensions of 1980 service employment should not be interpreted as projections. Our extensions were developed assuming that annual employment growth rates experienced by services during the 1960-73 time period would remain the same through to 1980.

This approach has given us a 1980 state service employment leve of 1,600,000 jobs (see Table III-34), an increase of 400,000 jobs over 1973. The

TABLE III-33

ABSOLUTE LEVEL AND PERCENT DISTRIBUTION OF SERVICE EMPLOYMENT IN THE MAJOR LABOR MARKET AREAS IN MASSACHUSETTS - 1960, 1973 AND EXTENDED TO 1980.

MLMA	1960		1973		1980	
	#	% dist.	#	% dist.	#	% dist.
Boston	474,792	65%	748,411	62%	956,058	60%
Springfield	59,790	8	93,717	8	119,396	7
Worcester	37,263	5	65,885	5	89,540	6
Lawrence-Haverhill	18,969	3	30,395	3	39,171	2
New Bedford	17,080	2	23,598	2	31,158	2
Lowell	13,067	2	22,977	2	31,143	2
Brockton	15,534	2	30,104	2	42,985	3
Fall River	12,411	2	20,658	2	27,184	2
MLMA Total	645,906	89%	1,035,745	86%	1,336,385	84%
Statewide Total	713,104	100%	1,207,868	100%	1,604,510	100%

Source: Harbridge House, Inc., based on unpublised Employment and Wages by labor market area 1973 and 1960, Division of Employment Security.

major labor market areas and most notably Boston continued to lose their share of state service activity from 86 percent in 1973 to 84 percent in 1980. Boston's share has been estimated at 60 percent in 1980, down from 62 percent in 1973, but such a growth rate would still allow Boston to add 200,000 jobs and raise its service employment to 956,000.

Other labor market areas whose share of state service activity decreased were Springfield and Lawrence-Haverhill. Both of these areas lost 1 percent of service activity in the state, but still added new service jobs of 24,000 and 11,000 respectively. Areas whose share increased during this time period were Worcester and Brockton. Both areas increased their shares by 1 percent and added new service jobs of 24,000 and 12,000 respectively.

6. Recruitment of Service Activities to Base Areas.

Earlier in this report it was suggested that the "export" (out-of-state) sales of service activities and hence the "export" employment of services may be relatively small.

Nonetheless the fact that services do have export employment is of critical significance to any state and local policy that attempts to alter or channel particular service activities. If a service industry is wholly supported by in-state sales, then first, its growth will merely be dependent upon the general growth of the income of the state and upon the population which earns and spends it; second, the recruitment of these industries will siphon off jobs from other parts of the state to the recruiting area. Conversely, to the extent that services are supported by out-of-state sales, they bring added money into Massachusetts. Their growth is not dependent upon internal growth but upon the prosperity of the national or regional economy. They obviously have a larger potential market, and recruiting these activities need not be a "zero-sum game" in which expansion in one area necessitates decline in another area.

The state's choices on economic development in general can be illustrated by the above differences between in-state and "export" services.

If the decision is made to attract in-state or locally supported services, state government will have little policy leverage -- how, after all, can state policy alter the geographic distribution of barber shops? Equally important, state government will implicitly be supporting not growth, but redistribution, not economic efficiency, but economic equity.

The concern for growth, for an increase in output, is one that posits the importance of extra dollars. There is no consideration for who spends or receives these dollars. A dollar is implicitly felt to be just as valuable no matter who the recipient is.

A different approach stems from a concern for the distribution of dollars or jobs not for number of these economic benefits.

The objectives of equity and efficiency need not be placed in opposition to each other but because our efforts on behalf of economic development or any other program are limited, one of these concerns is frequently more emphasized than the other.

Who is to say, except by some value judgement, that it is better to redistribute activities within an area than to increase the number of such activities. In fact, to the extent that this decision is made, the state is probably in the best position to do so. The mechanism of the private market has historically determined both considerations -- size and location -- but the state must have a voice too. Otherwise, the state would relegate all economic decisions to the private market. This is not the case however because, if nothing else, the state is the largest spender and economic generator in Massachusetts.

In terms of recruiting service activities, the state must play a major decision making role. Even more than is the case in manufacturing, services likely have large amounts in-state or locally supported sectors. Efforts to attract these activities will represent a redistribution of state's jobs not an increase in the state's jobs. We believe that it is the state's role to determine this

equity consideration. If not, then efforts by one base community to relocate, a telephone company facility for example, may serve the interests of the community but not the interests of the state.

To the extent that a service activity is an export activity, the above issues do not arise but in cases where service employment is dependent upon the the local or area economy the above equity and efficiency argument is quite prominent.

The state's role in determining equity and efficiency considerations would be as follows. They would identify the potential candidates for recruitment for the various local areas and coordinate their recruitment efforts. Such coordination would prevent inter-local rivalries and achieve maximum effectiveness of location. The state would provide seed money for the effort by negotiating with the locality as to their particular staff and resource needs. In addition, they evaluate and monitor local efforts. The overriding objective of the state's role would be to insure that economic development concerns and decision-making powers become ingrained at the local level.

The local area's role in this process would be to select those industries they desired from among the list of potential industries supplied by the state. And, if that list did not meet their needs, the local areas would provide evidence for recruiting other types of industries. The local areas would also plan, initiate and operate their own recruitment programs and work with the state on local and state policies that could effect the program's outcome. In addition, the local areas would be required to make progress reports to the state and/or indicate what other resources were necessary to complete the recruitment program.

In the particular base areas, recruitment candidates identified were as follows. In the Chicopee-Ludlow area candidates were located primarily in the goods transport sector and miscellaneous wholesaling. A recruitment program undertaken by Chicopee-Ludlow and aimed at these industries would most likely effect a redistribution of employment within the Springfield labor market area, unless Chicopee-Ludlow could show that the types of transportation/

wholesaling activities they were seeking were first, region serving and second, not now abundantly present in Springfield, for example.

In the Bourne, Mashpee, Falmouth and Sandwich area, no candidates for recruitment were found. This result was primarily due to the high seasonality and low wages typical of most of that area's service employment. Recruitment efforts for the Bourne area would perhaps be best directed at alternative economic sectors.

In Boston, all sub-sectors of the service industry were increasing rapidly except the trade sector. Due to this rapid increase a recruitment program for the Boston area might not be the best approach. A better approach for Boston would be to establish a screening process for industries desiring to locate in the city. Such a process could screen out those uses with undesirable wage levels, cyclical instability and poor growth performance.

In Chelsea, industries recommended for recruitment were in the wholesale sector. These industries have a past history of being oriented towards a Chelsea location and, on the average, have relatively high wage levels, low skill requirements for entry level positions and hire primary heads of households. For instance, to the extent that it could expand, the Chelsea produce market is a good example of a high-wage service activity which has a strong region serving role and does not attempt to duplicate nearby activities available in Boston.

APPENDIX I-1

DEFINITION OF THE ALL-SERVICE SECTOR

The Standard Industrial Classification Code Manual (1967) was used to define the major service sectors of: 1) Transportation, Communication, and Public Utilities; 2) Wholesale and Retail Trade; 3) Finance, Insurance, and Real Estate; and 4) Selected Services as follows:

- Transportation, Communication, Electric, Gas, and Sanitary Services. This division includes enterprises engaged in passenger and freight transportation by railway, highway, water, or air, or furnishing services related to transportation; petroleum pipe line transportation; warehousing; telephone and telegraph communication services; radio and television broadcasting; and the supplying of electricity, gas, steam, water, or sedentary services. Industries in this division are to a large extent regarded legally as having a semi-public character. Most of the establishments included are regulated by commissions or other public authorities as to the rates or prices they may charge and the services they may render.

  The SIC codes are arranged in this manner:

  TRANSPORTATION, COMMUNICATION, ELECTRIC, GAS, AND SANITARY SERVICES

  40 RAILROAD TRANSPORTATION
  401 Railroads
  402 Railroad Passenger Car Service
  404 Railway Express Service

  41 LOCAL AND INTERURBAN PASSENGER TRANSIT
  411 Local and Suburban Transportation
  412 Taxicabs
  413 Intercity Highway Transportation
  414 Transportation Charter Service

415 School Buses
417 Bus Terminal and Service Facilities

42 TRUCKING AND WAREHOUSING
421 Truckling, Local and Long Distance
422 Public Warehousing
423 Trucking Terminal Facilities

44 WATER TRANSPORTATION
441 Deep Sea Foreign Transportation
442 Deep Sea Domestic Transportation
443 Great Lakes Transportation
444 Transportation On Rivers and Canals
445 Local Water Transportation
446 Water Transportation Services

45 TRANSPORTATION BY AIR
451 Certificated Air Transportation
452 Noncertificated Air Transportation
458 Air Transportation Services

46 PIPE LINE TRANSPORTATION
461 Pipelines, Except Natural Gas

47 TRANSPORTATION SERVICES
471 Freight Forwarding
472 Arrangement of Transportation
473 Stockyards
474 Rental of Railroad Cars
478 Miscellaneous Transportation Services

48 COMMUNICATION
481 Telephone Communication
482 Telegraph Communication
483 Radio and Television Broadcasting
489 Communication Services, nec

49 ELECTRIC, GAS, AND SANITARY SERVICES
491 Electric Companies and Systems
492 Gas Companies and Systems
493 Combination Companies and Systems
494 Water Supply
495 Sanitary Services
496 Steam Supply
497 Irrigation Systems

- Wholesale and Retail Trade.

SIC 50 - Wholesale Trade. This group includes establishments or places of business primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional, or professional users; or to other wholesalers; or acting as agents in buying merchandise for or selling merchandise to such persons or companies. The chief functions of establishments included in wholesale trade are selling goods to trading establishments, or to industrial, commercial, institutional and professional users; and bringing buyer and seller together.

SIC 52-59 - Retail Trade. Retail trade includes establishments engaged in selling merchandise for personal, household, or farm consumption, and rendering services incidental to the sale of goods. In general, retail establishments are classified by kind of business according to the principal lines of commodities sold, or the usual trade designation. Some of the important characteristics of retail trade establishments are: the establishment is usually a place of business and is engaged in activities to attract the general public to buy; the establishment buys or receives merchandise as well as sells; the establishment may process its products, but such processing is incidental or subordinate to selling; the establishment is considered as retail in the trade; and the establishment sells to customers for personal, household, or farm use.

The following SIC's are included in this major division:

WHOLESALE AND RETAIL TRADE

50 WHOLESALE TRADE
501 Motor Vehicles & Automotive Equipment
502 Drugs, Chemicals, and Allied Products
503 Dry Goods and Apparel
504 Groceries and Related Products
505 Farm Product Raw Materials
506 Electrical Goods

507 Hardware; Plumbing & Heating Equipment
508 Machinery, Equipment, and Supplies
509 Miscellaneous Wholesalers

RETAIL TRADE

52 BUILDING MATERIALS & FARM EQUIPMENT
521 Lumber and Other Building Materials
522 Plumbing & Heating Equipment Dealers
523 Paint, Glass, and Wallpaper Stores
524 Electrical Supply Stores
525 Hardware and Farm Equipment

53 RETAIL GENERAL MERCHANDISE
531 Department Stores
532 Mail Order Houses
533 Variety Stores
534 Merchandising Machine Operators
535 Direct Selling Organizations
539 Misc. General Merchandise Stores

54 FOOD STORES
541 Grocery Stores
542 Meat and Fish (Sea-Food) Markets
543 Fruit Stores and Vegetable Markets
544 Candy, Nut, and Confectionery Stores
545 Dairy Products Stores
546 Retail Bakeries
549 Miscellaneous Food Stores

55 AUTOMOTIVE DEALERS & SERVICE STATIONS
551 New and Used Car Dealers
552 Used Car Dealers
553 Tire, Battery, and Accessory Dealers
554 Gasoline Service Stations
559 Miscellaneous Automotive Dealers

56 APPAREL AND ACCESSORY STORES
561 Men's & Boys' Clothing & Furnishings
562 Women's Ready-to-Wear Stores
563 Women's Accessory & Specialty Stores
564 Children's & Infants' Wear Stores
565 Family Clothing Stores
566 Shoe Stores
567 Custom Tailors
568 Furriers and Fur Shops
569 Miscellaneous Apparel & Accessories

57 FURNITURE AND HOME FURNISHINGS STORES
571 Furniture and Home Furnishings
572 Household Appliance Stores
573 Radio, Television, and Music Stores

58 EATING AND DRINKING PLACES
581 Eating and Drinking Places

59 MISCELLANEOUS RETAIL STORES
591 Drug Stores and Proprietary Stores
592 Liquor Stores
593 Antique Stores and Secondhand Stores
594 Book and Stationery Stores
595 Sporting Goods Stores and Bicycle Shops
596 Farm and Garden Supply Stores
597 Jewelry Stores
598 Fuel and Ice Dealers
599 Retail Stores, nec

- Finance, Insurance, and Real Estate. This division comprises establishments operating primarily in the fields of finance, insurance, and real estate. Finance includes banks and trust companies, credit agencies other than banks, holding companies, other investment companies, brokers and dealers in securities and commodities contracts, and security and commodity exchanges. Insurance covers carriers of all types of insurance, and insurance agents and brokers. Real estate includes owners, lessors, lessees, buyers, sellers, agents and developers of real estate.

These SIC's are classified in the following manner:

FINANCE, INSURANCE, AND REAL ESTATE

60 BANKING
601 Federal Reserve Banks
602 Commercial and Stock Savings Banks
603 Mutual Savings Banks
604 Trust Companies, Nondeposit
605 Functions Closely Related to Banking

61 CREDIT AGENCIES OTHER THAN BANKS
611 Rediscount and Financing Institutions
612 Savings and Loan Associations
613 Agricultural Credit Institutions
614 Personal Credit Institutions
615 Business Credit Institutuons
616 Loan Correspondents and Brokers

62 SECURITY, COMMODITY BROKERS AND SERVICES
621 Security Brokers and Dealers
622 Commodity Contracts Brokers, Dealers
623 Security and Commidity Exchanges
628 Security and Commodity Services

63 INSURANCE CARRIERS
631 Life Insurance
632 Accident and Health Insurance
633 Fire, Marine, and Casualty Insurance
635 Surety Insurance
636 Title Insurance
639 Insurance Carriers, nec

64 INSURANCE AGENTS, BROKERS AND SERVICE
641 Insurance Agents, Brokers, and Service

65 REAL ESTATE
651 Real Estate Operators and Lessors
653 Agents, Brokers, and Managers
654 Title Abstract Comapnies
655 Subdividers and Developers
656 Operative Builders

66 COMBINED REAL ESTATE, INSURANCE, ETC.
661 Combined Real Estate, Insurance, Etc.

67 HOLDING AND OTHER INVESTMENT COMPANIES
671 Holding Companies
672 Investment Companies
673 Trusts
679 Miscellaneous Investing Institutions

- Services. This division includes establishments primarily engaged in rendering a wide variety of services to individuals and business establishments. Hotels and other lodging places; establishments providing

personal, business, repair, and amusement services; medical, legal, engineering, and other professional services; educational institutions; non-profit membership organizations; and other miscellaneous services are included.

The following diverse group of industries are included in this major division:

SERVICES

70 HOTELS AND OTHER LODGING PLACES
701 Hotels, Tourist Courts, and Motels
702 Rooming and Boarding Houses
703 Trailer Parks and Camps
704 Membership-Basis Organization Hotels

72 PERSONAL SERVICES
721 Laundries and Dry Cleaning Plants
722 Photographic Studios
723 Beauty Shops
724 Barber Shops
725 Shoe Repair and Hat Cleaning Shops
726 Funeral Service and Crematories
727 Garment Pressing, Alteration, Repair
729 Miscellaneous Personal Services

73 MISCELLANEOUS BUSINESS SERVICES
731 Advertising
732 Credit Reporting and Collection
733 Duplicating, Mailing, Stenographic
734 Services to Buildings
735 News Syndicates
736 Private Employment Agencies
739 Miscellaneous Business Services

75 AUTO REPAIR, SERVICES, AND GARAGES
751 Automobile Rentals, Without Drivers
752 Automobile Parking
753 Automobile Repair Shops
754 Automobile Services, Except Repair

76 MISCELLANEOUS REPAIR SERVICES
762 Electrical Repair Shops

763 Watch, Clock, and Jewelry Repair
764 Reupholstery and Furniture Repair
769 Miscellaneous Repair Shops

78 MOTION PICTURES
781 Motion Picture Filming and Distributing
782 Motion Picture Production Services
783 Motion Picture Theaters

79 AMUSEMENT AND RECREATION SERVICES, NEC
791 Dance Halls, Studios, and Schools
792 Producers, Orchestras, Entertainers
793 Bowling and Billiard Establishments
794 Misc., Amusement, Recreation Services

80 MEDICAL AND OTHER HEALTH SERVICES
801 Offices of Physicians and Surgeons
802 Offices of Dentists, Dental Surgeons
803 Offices of Osteopathic Physicians
804 Offices of Chiropractors
806 Hospitals
807 Medical and Dental Laboratories
809 Health and Allied Services, nec

81 LEGAL SERVICES
811 Legal Services

82 EDUCATIONAL SERVICES
821 Elementary and Secondary Schools
822 Colleges and Universities
823 Libraries and Information Centers
824 Correspondence and Vocational Schools
829 Schools and Educational Services, nec

84 MUSEUMS, BOTANICAL, ZOOLOGICAL GARDENS
841 Museums and Art Galleries
842 Botanical and Zoological Gardens

86 NONPROFIT MEMBERSHIP ORGANIZATIONS
861 Business Associations
862 Professional Organizations
863 Labor Organizations
864 Civic and Social Associations
865 Political Organizations
866 Religious Organizations
867 Charitable Organizations
869 Nonprofit Member Organizations, nec

88 PRIVATE HOUSEHOLDS
881 Private Households

89 MISCE LLANEOUS SERVICES
891 Engineering and Architectural Services
892 Nonprofit Research Agencies
893 Accounting, Auditing, and Bookkeeping
899 Services, nec

APPENDIX II

SUMMARY OF "BEST INDUSTRIES" FOR EIGHT MAJOR MASSACHUSETTS LABOR MARKET AREAS

APPENDIX II

"BEST" INDUSTRIES FOR MASSACHUSETTS MAJOR LABOR MARKET AREAS, 1973[a]

SIC #	M.L.M.A.	Percent of Total Area Employment	Employment Growth during 1970-1971 Recession (%)	Employment Growth 1960-1973(%)	1973 Average Annual Wage	Employment Projected to 1980
	BOSTON: Total Area Employment, 1973 = 1,066,430					
48	Communications	3	3	40	11,354	34,850
55	Automotive Dealers & Service Stations	2	1	18	8,656	21,647
64	Insurance agents, brokers, services	1	2	41	9,725	9,694
81	Legal services	1	2	73	9,380	8,636
82	Educational Services	4	3	b	8,906	68,258
	SPRINGFIELD: Total Area Employment, 1973 = 165,952					
42	Trucking & Warehousing	2	3	58	4,199	3,195
48	Communications	2	6	18	10,452	3,473
82	Educational Services	2	9	23	8,125	
	WORCESTER: Total Area Employment, 1973 = 113,701					
48	Communication	2	2	26	10,188	2,838
49	Electric, gas, sanitary services	3	1	173	12,772	4,890
50	Wholesale Trade	7	4	59	9,259	9,601
64	Insurance agents, brokers, services	1	8	35	10,270	670
	LAWRENCE-HAVERHILL: Total Area Employment, 1973 = 71,536					
42	Trucking & Warehousing	1	3	10	9,830	849
48	Communications	1	3	24	8,639	52
63	Insurance Carriers	1	19	58	9,011	693
73	Miscellaneous Business Services	3	19	b	9,654	3,664
	NEW BEDFORD: Total Area Employment, 1973 52,400					
63	Insurance Carriers	.4	1	18	10,047	385
64	Insurance agents and brokers	.4	2	39	8,853	496
89	Miscellaneous Services	.4	9	149	9,015	
	LOWELL: Total Area Employment, 1973= 50,746					
49	Electric, gas and sanitary	1	2	12	11,994	
50	Wholesale Trade	3	2	76	9.889	1,959
52	Retail Trade	2	8	99	9,341	1,220
55	Automotive dealers and service stations	3	75	3	8,291	
	BROCKTON: Total Area Employment, 1973=48,412					
42	Trucking and warehousing	3	1	654	10,892	2,092
48	Communications	3	6	42	10,409	2,016
49	Utilities	2	5	50	11,079	1,106
50	Wholesale Trade	5	5	76	9,569	3,598
63	Insurance carriers	1	8	277	9,372	1,027
	FALL RIVER: Total Area Employment, 1973=44,071					
42	Trucking and warehousing	1	6	7	9,293	1,741
48	Communications	3	22	40	9,912	894
49	Electric, gas and sanitary services	2	1	18	12,309	

a To qualify as a "best" industry, Harbridge House established four basic criteria for an industry to meet. They were as follows: (1) It must provide a sizeable portion, at least one percent, of the total 1973 employment for the labor market area; (2) its employment growth rate during the recession year of 1970-1971 must be positive - given the context of a state-wide employment drop of 3 percent; (3) its 1973 average wage must be better than the 1973 total industry mean wage of $8,500 or $600 greater than the industry mean wage for the particular labor market area - whichever was less; and (4) it must have a steady, positive growth rate or around 20 percent during this time period.

b Coverage changes prevent us from observing accurate growth rates for the years not influenced by coverage changes.

APPENDIX III-1
METHODOLOGY TO COMPENSATE FOR DES COVERAGE CHANGE

Data collected by the Division of Employment Security is based on employer's unemployment insurance reports. Its nature causes concern about the extent to which it accounts for total employment in the state. (See Appendix C.) We compared DES data to the Employment data available through the B. L. S. (See Exhibit following.)

TABLE D

1973 STATE-WIDE EMPLOYMENT

	Employment & Earnings Data	DES covered Employment	% DES of E.E.
Total Employment	2340.0	1953.8	84
Construction	108.8	107.8	99
Manufacturing	618.7	628.1	102
Sub-Total	727.5	735.9	101
TCU [a]	122.7	117.6	96
Trade	522.2	523.3	100
FIRE [b]	134.3	130.8	97
Selected Services	490.6	436.1	89
Services Total	1269.8	1207.8	95

a Transportation, Communication, Utilities.
b Finance, Insurance and Real Estate.

Source: Harbridge House Inc., based on calculations from Employment and Earnings, May 1974, U. S. Department of Labor, Bureau of Labor Statistics.

Fewer service jobs show goods producing jobs are covered by unemployment insurance. The above exhibit compares the Bureau of Labor Statistics count to the DES totals. (DES does not include government employment; Bureau of Labor Statistics totals do. This explains the 84% in the first row.)

Jobs in the selected services are the most under-represented in DES data. One of the major problems with DES data is a result of changes in the legal definitions of jobs eligible for employment security coverage.

When coverage is extended to jobs formerly excluded from employers' reports (which we shall call type B jobs), DES data becomes misleading. For example, reported levels of employment in SIC 841, Museums and Art Galleries, increased by 3686% in 1972, a coverage change year. Clearly, viable observations and predictions cannot be made from such data.

Since SIC employment data is not available by specific job (e.g., secretaries, guides, administrators in Museums and Art Galleries), it is not possible to measure the exact proportions in which type A (covered during entire time period of this study) and type B jobs make up the post-coverage employment totals. Therefore, we cannot solve the coverage change problems by simply subtracting the B jobs from the A & B totals.

It is possible, however, to manufacture an estimate of A & B employment for years before coverage changes through examination of known A & B employment growth rates. We derived A & B growth rates from DES and BLS and CPB data. This process allows us to compare employment growth in different sectors of the economy without the problem of inflated growth rates due to coverage changes.

Employment and earnings data showed a growth in total state employment of 23 percent from 1960 to 1973. Using our extrapolated 1960 DES values and the actual 1973 DES values, we calculated a 21 percent increase.

For the service sector, employment and earnings data indicates a 44 percent increase, while our DES data produces a rate of 46%. Without our extrapolated'60 values, DES growth rates would be around 70 percent for the service sector.

A. Coverage Changes as of January 1, 1962

Coverage change effective January 1, 1962 affected SIC's: 601, Federal Reserve Banks; 613, Agricultural Credit institutions; and 614, Personal credit institutions and had significant impact on reported employment levels. The disturbance occurred early enough, that we are able to evaluate actual A & B growth rates. The change also occurred early within the time span of our study. The segment of time in which data was based solely on Type A employment represents a small part of our picture of growth. Therefore, for purposes of comparison with other SIC's we have formulated a hypothetical 1960-1973 growth rate, based on the known A & B growth rate of 1965-1973:

	EMPLOYMENT LEVELS			GROWTH RATES %	
	HH Extrapolated 1960	DES Actual 1965	1973	Annual 65-73 for A&B jobs	Extrapolated 60-73 for A&B jobs
601	1031.14	1217	1587	3.37	54%
613	78.69	107	175	6.34	122
614	3691.76	3819	4031	.68	9

Source: Harbridge House Inc., based on calculations from Employment and Wages in Establishments subject to the Massachusetts Employment Security Law, State summaries 1960, 1965, 1973 Division of Employment Security.

The manufactured 1960-1973 growth rates are much more meaningful than the growth rates derived from actual DES data.

B. Coverage Changes as of January 1, 1972

Growth rates for SIC's which experienced coverage changes on January 1, 1972, present problems of greater magnitude. Thirty-nine three-digit industrial classifications were subject to the'72 legislation. DES data illustrates, however, that only for seven of those SIC's were reported employment levels significantly affected. They are: 806, Hospital; 809, Health workers, 822, colleges and universities, 841, Museums, 864, Civic and social associations, 867, charitable organizations and 892, non-profit research agencies.

For those seven SIC's, the real DES A & B employment data covering only one year's growth (2 data points) is not sufficient for the creation of a reliable growth curve. In this situation, "County Business Patterns" Employment estimates by SIC are useful as supplementary indicators. CBP data is published by the U. S. Department of Commerce and represents employment covered under the Federal Insurance Contributions Act. The figures are preliminary estimates of FICA-covered jobs filed by the employers.

FICA and DES reporting methodologies do not correspond to each other, and, therefore, the data is not comparable in every respect. FICA data covers different jobs. It includes employment in "non-profit membership organizations under compulsory coverage," "all employment of religious, charitable, educational and other non-profit organizations covered under the elective procedures of the FICA," employment in private schools, both elementary and secondary. Second, methods of processing and adjusting the data are different in the two agencies. Third, employers base their CBP estimates on first quarter performance and file in mid-March. This data will reflect seasonality and therefore, will not be comparable to our DES annual averages.

The following chart shows that seasonality serves as a reliable predictor of relative levels of employment only in SIC's 864 and 867. Of the six SIC's included in the chart, only 864 and 867 are subject to significant seasonal fluctuations.[1] The seasonal fluctuations of CBP data seem to bear some resemblance to the seasonal behavior of DES data. This exercise, thus serves as a first step in assuring us of an at least rough comparability between the two sets of data.

1
A thorough discussion of seasonality and the Harbridge House 80 percent measure will follow in another section of this report.

	CBP First Quarter Estimate	As indicated by DES monthly March was ____ in seasonal cycle	Des Annual average
806	87,527	--	87,063
809	39,647	--	39,473
822	48,334	--	50,555
864*	9,304	low	11,355
867	5,499	low	7,658
892	4,751	--	4,789

Source: Massachusetts County Business Patterns, 1972. Department of Commerce, Bureau of Census and Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law., State Summary 1972, Division of Employment Security.

*
Date for SIC 841 is not available in accordance with federal disclosure law. This chart illustrates, however, that it is comparable to the DES March levels of employment.

In SIC's 806, 809 and 892, CBP figures are fairly accurate estimates of the DES employment levels.

	CBP		DES	
	1972	1973	1972	1973
806	87,527	91,034	87,063	91,426
809	39,647	42,366	39,473	42,558
892	4,751	5,147	4,789	5,353

Source: Massachusetts County Business Patterns 1972, 1972, U. S. Department of Commerce, Bureau of Census and Employment and Wages in Establishments subject to the Massachusetts Employment Security Law, State Summaries, 1972, 1973.

This leads us to believe that in these industries, the Department of Commerce and the DES are probably counting the same jobs, and that CBP growth rates may be used with some confidence to predict probably 1960 A & B DES levels.

We also looked at growth rates for DES type A jobs alone, i.e., jobs always covered under Employment Security Law. In those cases (SIC's 809 and 864) where type A jobs represent a relatively large proportion of A & B employment, type A growth serves as a useful indicator for our extrapolated A & B growth rates.

The following chart shows all the growth rates used to project 1960 A & B employment in the seven SIC's.

ANNUAL GROWTH RATES (%)

	CBP Estimates A & B Employment				DES
	1962-1967	1967-1972	1972-1973	Actual A & B Employment 1972-1973	A Employment alone 1960-1971 Average Annual Growth Rate
SIC	AVERAGE ANNUAL GROWTH RATE				
806	5.88	5.70	4.01	5.01	5.57
809	11.72	13.13	6.86	7.82	12.05
822	619	1.30	(1.26)	2.97	(65.38)
841	D*	D*	D*	1.01	7.93
864	5.04	1.42	(1.61)	9.85	(.01)
867	(.97)	.99	16.09	20.71	88.25
892	5.53	(1.99)	8.34	11.78	16.81

Source: Same as preceding CBP years 1962, 1967, 1972, 1973 and DES 1960, 1971, 1972, 1973.

*
Not available in accordance with federal disclosure law.

In SIC's 822 and 841, CBP data for 1972, 1973 was much further out of line with DES data than was the case with the other SIC's which we examined. We felt that we could obtain more accurate estimates by relying on growth rates derived from 1972-1973 DES data.

DEVELOPMENT OF 1960 EXTRAPOLATED EMPLOYMENT LEVELS WITH SIC COVERAGE CHANGES

SIC	DES 1972 A & B Employment	Extrapolated Employment Levels 1967	1962	Annual % in Employment 1962-1972 [a]	Extrapolated Employment Level 1960
806	87,063	65,987	49,589	5.79	44,309
809	39,473	21,302	12,240	12.42	9,685
822	50,555				35,582
841	1,666				1,477
864	11,355	12,299	11,462	(.09)	11,483
867	7,658	7,290	7,651	.01	7,650
892	4,789	5,295	4,018	1.77	3,880

Source: Harbridge House Inc.

[a] These annual percent changes are similar to compounded percent changes.

SIC COVERAGE CHANGES
1960 LEVELS OF EMPLOYMENT AND % GROWTH
1960-1973

Coverage Changes Effective 1 January 1972

SIC	Extrapolated 1960 Employment Level	%Growth 1960-1973[a]	DES 1960 Employment Level	Difference of DES & Extrapolated 1960 Employment Levels
806	44,300	106%	2,036	42,264
809	9,700	339	9,243	457
822	35,600	46	26	35,574
841	1,500	12	19	1,481
864	11,500	8	4,398	7,102
867	7,700	20	0	7,700
892	3,900	37	46	3,854
			Total Difference for Service Sector	98,432

Coverage Changes Effective 1 January 1962

601	1,000	59%	9	991
613	100	75	14	86
614	3,700	9	3,116	584
			Total Difference for FIRE	1,661

[a] This percent growth is using our 1960 extrapolated level of employment.

These total differences between 1960 DES and Extrapolated Levels of Employment were added to the 1960 DES Employment:

1960 DES Level of employment	1,511,573
Additions due to coverage changes	98,432 1,661
1960 Extrapolated Total Level of Employment for the State	1,611,666

Our calculations for the State's employment growth from 1960 were then based on 1,611,666. The then more realistic rate of growth for the state was 21 percent.

APPENDIX III-2
PROBLEMS AND INCONSISTENCIES FOUND IN THE DES DATA

Some of the problems or omissions that Harbridge House has found in the DES data are as follows:

A. State-wide

Prior to 1970 there were no calculated average annual employment figures for the 3-digit SIC codes. Therefore, we had to obtain an average annual employment figure from the monthly employment data. There was also no 2-digit SIC code data prior to 1970. Therefore, in order to obtain average annual employment for the 2-digit SIC codes, we found it necessary to aggregate our 3-digit average employment figures. We also had to do the same in order to find the number of establishments for a 2 digit SIC code.

B. Major labor market areas

At this level we were working with data for the 2-digit SIC codes. There were no average annual employment figures prior to 1968. So, as in the state-wide case, we had to obtain annual averages from the monthly employment data that was available.

C. Cities and Towns

Data exists only on the 3 digit SIC level. Also for those years prior to 1970 we had to calculate the average annual employment from the monthly statistics. Then, in order to obtain 2-digit information we had to aggregate our 3- digit employment and establishment data.

D. Correctness of DES data

In several instances a sector's total available through the DES was incorrect. Totals were occasionally well out-of-line with corresponding totals for other years. Therefore, we have double-checked our own averages and totals, and prefer to rely on them in these cases.

E. Area's total employment

We found that it was even difficult to obtain a figure for an area's total employment. This was particulary true in the case of the major labor

market areas and also of the cities and towns. In order to obtain a total area employment figure for the major labor market areas prior to 1968 or for the cities and towns prior to 1970, it is necessary to calculate the annual averages for each major industrial sector in the area and then total these annual averages. After all these calculations you would have a total average annual employment figure for the area.

F. Coverage Changes

In dealing with the DES data it was difficult to obtain accurate growth rates for the period from 1960 to 1973. This was due to the fact that changes occurred in the Massachusetts Employment Security Law, affecting the number of people who were reported as covered employees. Most of this change was effective January 1, 1972 and we were able to adjust the figures accordingly on a state-wide level. (See Appendix IV-1 for our detailed methodology. This explains how we compensated for these coverage changes and developed accurate growth rates for 3-digit SIC's on the state-wide level). We were unable to apply the same methodology to the major labor market areas and to the cities and towns. Therefore, in these cases, we generally resorted to using growth rates from 1960 to 1970.

G. Illegible totals

The data for the years before 1970 was tabulated and printed in such a way that in many instances the sector and area totals were indecipherable. Total figures were generally several digits longer than any other figures on the page. Adequate space was not provided for the extra digits.

It was almost impossible to separate the figures out of the long lines of numbers which resulted. This situation required that we calculate a large proportion of the totals by hand.

H. Inconsistent print-outs of data (digits omitted)

Another form of printing or tabulation error produced numbers which had missing digits. For example, and SIC might exhibit employment levels ranging around three thousand for 11 months of the year and for one month, the

figure would be a three with two space after and then an 8.

We attempted to find the missing digits by adding up the columns in which the "inconsistent" figures appeared, and comparing our totals to the printed totals. Our results indicated that no single digit could consistently be substituted for the spaces. Therefore, everytime an inconsistent figure occured, we had to add up the column of SIC industries in that particular sector, for that month, and determine if possible, the missing digit or digits.

I. Data affected by inconsistent reporting methods of employers

In certain 3-digit SIC's we observed irregular fluctuations in annual employment levels or number of establishments. We were informed that businesses which typically have branch establishments connected to central offices report employment in varied ways. (This is inspite of the request of the DES to have each establishment report its employment separately.) Sometimes all employment of branches and affiliates is reported through the central office; and sometimes, each branch reports employment independently. Further, no records exist which specify the method which was followed in each industry.

Therefore, data for industries such as gas stations or food franchises (for example, fried chicken and hamburger stands), is to some extent non consistent with previous years. That is, the reported employment for a city or town is affected by the method which a franchise uses to report to the DES.

APPENDIX III-3
BASIC SERVICE INDUSTRY DATA DEVELOPED FROM THE DES UNPUBLISHED INFORMATION

As a result of our initial calculations, the following "raw" data is now available:

A. For the State:

Average annual employment in 3-digit SIC service industries for the years 1960, 1965, 1970-1973. Average annual compensation (total industry payroll divided by average annual employment) for the corresponding industries and years. Two digit SIC aggregates of all the three-digit data for employment and wages. (To obtain two digit wages, the three -digit payrolls and were summed and divided annual employment levels) Employment totals and average wages by each major service sector were also obtained.

B. For the eight principal major labor market areas:

(Boston, Brockton, Fall-River, Lawrence-Haverhill, Springfield, Worcester, Lowell, New Bedford).

Average annual employment and compensation in two-digit service industries for the even years, 1960 through 1970, and 1971-1973. Also calculated were the total average annual employment figures and average compensation wages for each service sector, and for all-service employment in each major labor market area.

C. For the cities and towns of the base areas.

(Boston, Chelsea, Chicopee, Ludlow, Mashpee, Bourne, Falmouth, and Sandwich)

Average annual employment and number of establishments, on a 3-digit and 2-digit SIC level for the years 1960, 1965, 1970, and 1973. Also calculated were the 1973 average annual compensation wage for each 3-digit SIC service industry in these town. The average employment and average compensation wage are also available for each major service sector, and the all-service employment in each of these cities and towns.

APPENDIX III-4

SERVICE INDUSTRY TRENDS DEVELOPED FROM
DES UNPUBLISHED INFORMATION

The following trends have been developed from the data obtained through the DES.

A. State-wide

For each 3-digit and 2-digit SIC service industry the following have been calculated:

1. Percent which it represents of all area industry
2. Percent of its particular service sector which it represents
3. Percent change in the number of establishments from 1960-to 1973.
4. Firm size (i.e. average number of employees/firm) in 1960 and 1973.
5. Absolute change in employment, 1960-1973
6. Percent change in average annual employment, 1960-1973.
7. Reaction to recession -- measure by the percent change in employment 1970-1971.
8. Percent change in the average wages from 1960 to 1973.

B. Major labor market areas

We have developed all of the above trends, for each of the major labor market area on a 2-digit SIC level.

C. Service industries

All of the 3-digit service industries have been arranged according to 1973 average state wage levels. The mean wage for all the service industries in the State and the standard deviation from the mean has been determined. We have grouped the wages then in order of their arragement 1 and 2 standard deviations above and below the statewide mean industry wage. Also given on this chart are:

1. Size of firm
2. Trend in size of firm (larger or smaller)
3. Percent change in employment, 1960-1973
4. Absolute change in employment, 1960-1973
5. Percent of total state coverec employment, 1973

A similar wage chart has also been developed just for those 3-digit SIC industries employing at least .5 percent of the total state covered employment (i.e. an industry employing approximately 10,000 people). In addition to the above, data, the chart includes the percent which these industries represent of each major labor market area's total employment and of each base area's total employment.

D. Those 3-digit service industries which represented at least .5 percent of the total state covered employment have also been arranged in order of growth.

This growth chart includes the following data for these industries:

1. Percent growth 1960-1973 (state-wide)
2. 1973 average industry wage (state-wide average)
3. Percent which the industry represents of total state employment, and of each major labor market's employment.

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